

**The Potential Beneficial Values of Waters Diverted in the Minnesota River for the  
Granite Falls Whitewater Park**

Dr. Robyn L. Ceurvorst<sup>a</sup>

Emily Seru<sup>b</sup>

Justin Bentaas<sup>c</sup>

- a. **Department of Recreation, Parks and Leisure Services  
Minnesota State University, Mankato  
Mankato, Minnesota 56001**
- b. **Department of Educational Leadership and Experiential Education  
Minnesota State University, Mankato  
Mankato, Minnesota 56001**
- c. **Department of Economic Development  
City of Granite Falls, Minnesota**

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# 1. Executive Summary

This report describes the investigation into the potential usage and resulting economic benefits of the proposed Granite Falls Whitewater Park at the Granite Falls Dam Site on the Minnesota River. For this beneficial value study, researchers used combination of methodology including a: 1) market analysis and 2) benefits transfer method to estimate beneficial value of a whitewater park development diverting water in the Minnesota River at Granite Falls, Minnesota. This report data is based on projected usage and benefits gained through surveys and economic benefit transfer estimates from comparable parks in the region. Findings are also based on a review of available information on outdoor recreation trends and regional economic impacts of similar parks. While the benefits estimates projected within this report are preliminary, further study for seasonal usage is recommended once the whitewater park has been developed.

This report is organized as follows:

- **Background and Market Analysis** examines the overall economic stimulus tourism brings to communities from park development. An overview of the local and regional markets is provided as a basis for the resulting data. Researchers administered a survey to local Granite Falls resident households and regional potential whitewater park users to derive market analysis primary data. Factors such as household makeup, intention to utilize the park, distance willing to drive to the park, fee level, intention to buy or rent equipment and other factors are presented within the data. This data could be utilized by Granite Falls in many ways including setting a fee for use, determining potential use and expenditures, and understanding overall interest in the whitewater park development.
- **Value of the Whitewater Park** examines the potential value of the whitewater park to those engaged in whitewater activities. The value is derived from potential direct expenditures by users. A summary of the added value the whitewater park development could impact to the community through indirect expenditures and other factors is included within a brief discussion of considerations for the City of Granite Falls. The consumer surplus or user value of a recreational outing or experience at the whitewater park result is derived from published, peer-reviewed economics literature. The benefits transfer method was utilized to estimate direct use values for the park.

Our results demonstrate that waters diverted in the Granite Falls whitewater park could generate considerable economic benefit. We estimate that the future annual monetary benefits potential derived from the park are greater than \$1,055,900 per year. This estimate would be adjusted when actual visitation data is collected for use level and expenditures after the whitewater park is developed. The estimate is conservative and does not include added value benefits which could not be quantified or valued within the limitations of this study.

## **2. Background and Market Analysis**

On December 18, 2015 the community of Granite Falls received a \$20,000 reconnaissance report funded by a matching contribution between the Granite Falls City Council/EDA and local non-profit Granite Falls Riverfront Revitalization (GFRR) detailing the potential for the development of a whitewater recreation area that would extend three miles from the site of the Granite Falls Dam (and municipal hydro plant) to Minnesota Falls. According to the report, the whitewater park potential development would include a dual-use approach at the present Granite Falls Dam site—wherein a recreational kayak/raft/etc. chute and fish passage would be installed within a portion of the dam where it would continue 1,500 feet directly parallel to downtown Granite Falls. This environmental and recreational feature has the capacity to catalyze downtown redevelopment as well as a number of other positive impacts.

In general, tourism is widely considered a mechanism for increases to economic value and impact. Economic value is the benefit which visitors gain from an opportunity to travel to specific recreation sites or taking trips. Economic impact is the influence or effect of spending from visitors or the tourism industry on one or more economic variables (business output/revenue/sales, value added/profits/income, employment, and government revenue/taxes).

Nationally, interest in outdoor activities and recreation is on the rise and so is the economic impact of outdoor recreation. Each year, Americans spend \$646 billion on outdoor recreation--more than they spend on gas for their cars. (Outdoor Foundation, 2012). The Outdoor Foundation's 2016 Outdoor Recreation Participation report found that nearly half of all Americans participated in at least one outdoor activity in 2015. According to the OF 2016 report, paddle sports and whitewater kayaking showed one of the most significant areas of growth over the past three years, with an average increase of 26 percent.

Recreation and tourism-related impacts extend past direct impacts on employment in the state of Minnesota. Earnings and tax receipts would need to be tracked as an economic parameter enhanced by tourism/recreation-related spending in the Granite Falls area. Within Minnesota, 69% of residents participate in outdoor recreation activities each year (OIA, 2016). Outdoor recreation generates 118,000 jobs, \$815 million in local and state tax revenue, \$11.6 billion in consumer spending, and \$3.4 billion in wages and salaries (OIA, 2016). Yellow Medicine County population decreased from 11,080 in 2000 to 10,438 in 2010 (U.S. Census Bureau, 2010). The population of Granite Falls decreased to 2,897 in 2010 from 3,070 in 2000 (U.S. Census Bureau, 2010). Southwest Minnesota population is expected to remain the same by the year 2035 (U.S. Census Bureau, 2010). Minnesota state population as a whole is projected to grow 12.9% by 2035 (U.S. Census Bureau, 2010).

### **2.1 Background of Service Areas, Use Level and Survey Methods**

Researchers conducted a survey to gather primary data from the local and regional market. The following section highlights both the local City of Granite Falls market and regional Minnesota River Valley, Sioux Falls and Twin Cities market background. Based on the

secondary data regarding service areas and primary data results, we estimated an average of 10,000 use days per year (amount each person would use the park per day). At least half of the Granite Falls respondents indicated an intention to use the park (total of 1,500 given Granite Falls has a population just under 3,000) for 1 to 5 days (approximately 7,500). Regional boater participants equal approximately 2,000 with the vast majority indicating intention to use the park at least 1 to 2 days per year and some more than 10 days per year, we conservatively estimated 2,500 user days per year for a total of 10,000 user days per year / season. The flow of the river, access factors, and weather will determine the seasonal of use for the park. Data from regional and national whitewater parks indicate this is a conservative estimate of use and appropriate for the City of Granite Falls at this time.

### ***City of Granite Falls***

The City of Granite Falls is located in southwestern Minnesota at the conjunction of US Highway 212 and State Highway 23 and 67 in Chippewa, Renville, and Yellow Medicine counties. The population hovers around 3,000 people, but they draw business from the area towns of Sacred Heart (600), Maynard (400), Clarkfield (850), Renville (1,300), Hanley Falls (300) and Wood Lake (422) for a total area population of nearly 7,000. Granite Falls is a two hour drive from two major metropolitan areas in the region, the Twin Cities from the East, and Sioux Falls, South Dakota from the Southwest (Figure 1).



Figure 1. Map of the Minnesota River (MSU Water Resources Center, 2016).

Granite Falls is located midway between Big Stone Lake State Park and Blue Earth State Park along the Minnesota River Valley Scenic Byway. It is also a significant environmental site on the State-designated Minnesota River Water Trail between Lac Qui Parle and Redwood Falls. The Minnesota River Valley Scenic Byway is actively promoted as an outdoor tourism destination, with outdoor amenities offered in towns and parks along the river. The Upper Sioux Agency State Park, a historic site preserved from the Dakota war of 1862, is a short drive or kayak down the Minnesota river south of town. Granite Falls median household income: \$46,800. Granite Falls ethnicity: 89.9% White, .06% African American, 5.2% Native American, .04% Asian, 1.8% from other races, 2.1% from two or more races, 4.7% Hispanic or Latino of any race.

### ***Minnesota River Valley***

The Minnesota River Valley begins at the headwaters of Big Stone Lake on the border of Minnesota and South Dakota. The Minnesota River confluences with the Mississippi River at Fort Snelling State Park near the Twin Cities. The Mdewakanton Dakota consider the confluence of the Minnesota and Mississippi Rivers, or *Bdote Minisota*, with deep historic and spiritual meaning. The interest and support toward the Granite Falls Whitewater Park Development was a consideration of the City of Granite Falls during this study. Several communities utilize Minnesota River water upstream and downstream of Granite Falls. Most of these communities are situated within a two hour driving distance.

The most responsive groups within the Minnesota River Valley included the paddling/boating clubs. Several communities, such as the Upper Sioux Community, Native American/indigenous tribal nations, and cities/townships were additionally conduct with no response. The following two paragraphs highlight the demographics of Sioux Falls (upstream of Granite Falls) and the Twin Cities (downstream of Granite Falls), the largest municipalities along the Minnesota River.

### ***Sioux Falls***

The City of Sioux falls, South Dakota, the largest city in the state of South Dakota, is located approximately two hours, or 130 miles southwest along Minnesota highway 23 from Granite Falls. As of 2015, Sioux Falls had an estimated population of 171,544 and is the fastest growing city in the state. Sioux Falls median household income: \$58,849. Sioux Falls **ethnicity**: 86.8% White, 4.2% African American, 2.7% Native American, 1.8% Asian, 0.1% Pacific Islander, 2.0% from other races, and 2.5% from two or more races, 4.4% Hispanic or Latino of any race.

### ***Twin Cities***

The Twin Cities metropolitan area is located approximately two hours, or 140 miles directly West of Granite Falls. The Twin Cities has the largest population in the Upper Midwest outside of Chicago. The metro area grew 4.5 percent to 2,977,455 people between 2010 and 2014, according to the Met Council estimates. St. Paul's population grew by 5.1 percent to 299,641, and Minneapolis grew by 7.5 percent to 411,286. Twin Cities median household income: \$68,772. Twin Cities ethnicity: 77.3% White, 7.7% Black, 6.2% Asian, 4.8% Hispanic, 4.0% Other

### ***Regional Whitewater Paddling Groups***

A survey was administered to the following regional potential user groups via an online

survey link through email correspondence:

- Midwest/CAN Northwoods Plan - Facebook
- SCSU Outdoor Endeavors - Facebook
- Kayaking Group MN (Southern Minnesota) - Facebook
- Bent River Outfitters, Mankato, MN
- Various Statewide Minnesota, South Dakota and Iowa Paddling Clubs
- Charles City Whitewater Park
- Michigan Whitewater Park - Bear River Whitewater Park
- Northern Michigan Paddling Club
- MSU Maverick Adventures - Facebook
- St. Cloud Outdoor Recreation, Minnesota
- American Whitewater National Group and Minnesota Chapter
- Indiana Whitewater Park - East Race Waterway

## 2.2 Market Analysis Survey Results

### 2.2.1 Granite Falls Local Residents Survey Results

This section presents data collected from a survey of utility customer resident households of Granite Falls, Minnesota. The mailed survey was conveniently administered to utility customers of Granite Falls. Since the total number of surveys administered was not trackable, a response rate could not be calculated. The total number of responses was  $n = 228$ .

Table 1 represents the household makeup of Granite Falls residents where 50% were single family households. Single residents comprised of 24% of households and 24% of households were single family with children (minor). Only 2% of households were unrelated residents. Table 2 indicates the vast majority of household residents were 42 years of age or older. Of those residents, 49% were over 60 years old. Table 3 represents that half of Granite Falls single family households with minor children have children between the ages of six to twelve years old. Some 40% of households with minor children have children under the age of six.

**Table 1. Household makeup of Granite Falls residents.**

Household Makeup	%	Count
Single family	50.22%	113
Single family with children	23.11%	52
Single resident	24.44%	55
Unrelated residents (roommates)	2.22%	5

$n = 225$

**Table 2. Adult ages of Granite Falls resident households.**

Adult ages	%	Count
18-24	4.04%	9
25-41	19.73%	44
42-60	35.87%	80
60+	48.88%	109

*n* = 223**Table 3. Ages of minor children in Granite Falls resident households.**

Minor children ages in household	%	Count
0-5	40.30%	27
6-12	50.75%	34
12-15	20.90%	14
16+	29.85%	20

*n* = 67**Table 4. Number of paddling participants in Granite Falls resident households.**

Number of paddling participants	%	Count
0	71.17%	158
1-2	22.07%	49
3-4	4.05%	9
More than 4	2.70%	6

*n* = 222

**Table 5. Number of household paddling participants who own paddling gear in Granite Falls.**

Number of paddling participants who own gear	%	Count
0	85.71%	192
1-2	12.50%	28
3-4	0.89%	2
More than 4	0.89%	2

*n* = 224

**Table 6. Number of household members interested in paddling activities among Granite Falls residents.**

Number of household members interested in paddling activities	%	Count
0	51.33%	116
1-2	37.17%	84
3-4	7.96%	18
more	3.54%	8

*n* = 228

**Table 7. Likelihood Granite Falls households would use a local store/outfitter to rent gear and learn skills.**

	%	Count
Yes	35.41%	74
No	44.02%	92
Not sure	20.57%	43

*n* = 209

**Table 8. Likelihood Granite Falls households would purchase paddling gear from a local store if available.**

	%	Count
Yes	24.88%	52
No	47.85%	100
Not sure	27.27%	57

*n* = 209

**Table 9. Number of Granite Falls' household members likely to participate in whitewater tubing.**

Number of household members	%	Count
0	50.00%	104
1-2	38.46%	80
3-4	9.13%	19
more	2.40%	5

*n* = 208

**Table 10. Days a month Granite Falls household members would participate in whitewater park activities.**

Days a month	%	Count
0	52.68%	108
1-2	31.22%	64
3-4	11.71%	24
5 or more	4.39%	9

*n* = 205

**Table 11. Days a year Granite Falls households participate in outdoor activities in the Granite Falls area.**

Days a year	%	Count
0	30.62%	64
1-5	22.49%	47
6-10	11.96%	25
11-20	9.09%	19
More than 20	25.84%	54

*n = 209***Table 12. Level of fee Granite Falls households would be willing to pay to use a whitewater park.**

Fee Level	%	Count
\$0	43.84%	89
\$10 or less	42.86%	87
\$20 or less	13.30%	27

*n = 203***Table 13. Dollars spent per Granite Falls household on outdoor recreation / travel annually.**

Dollars spent (USD\$)	%	Count
\$0	18.23%	37
\$1-\$200	25.62%	52
\$201-\$500	18.23%	37
\$501-\$1000	17.73%	36
\$1000+	20.20%	41

*n = 203*

**Table 14. Granite Falls household income level.**

Income Level (USD\$)	%	Count
\$0-25,000	19.58%	37
\$25,001-\$40,000	19.05%	36
\$40,001-\$60,000	19.05%	36
\$60,001-\$85,000	19.05%	36
\$85,000+	23.28%	44

*n* = 189

**Table 15. Comments of Granite Falls households on the Granite Falls whitewater park development**

spectators
work on lowering taxes
A natural pool or outdoor water park would be better
Although we would not use the whitewater park because of our age, our grandchildren would enjoy it.
purchase equipment as gift giving
golf
I'm too old for this, but I think it is a good thing for town.
This household is very pro-riverfront revitalization. This type of development would be very good for the town, economically, and for the region.
Leave the river alone.
What happened to making the river look natural with the DNR? The city won't make any money forking it out. I don't want my tax payer money spent on this.
I bike and run around town. The concern is the reputation of the river is bad and swimming in the river would make you sick.
one thing that would be very enjoyable is a nice walking/biking path along the river. so many other towns have this and I believe it is something that we really lack. Thanks!
Also kids 12-15
I would rather rent gear I would use occasionally
First page wrinkled, illegible

Also 16+ kid, but could not mark on survey, fix.

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## 2.2.2 Regional/Midwestern Boaters/Paddlers Survey Results

The group represents various whitewater paddling clubs related to existing whitewater parks in the Midwest, including groups in Iowa, South Dakota, Wisconsin, Michigan, and Indiana. The survey was conveniently administered via email link to various paddling groups' email servers, websites and social media pages, with an average range of 25-100 participants in each (potentially a total range of 100-500 people). Since the total number of surveys administered was not trackable, a response rate could not be calculated. The total number of responses was n = 159.

Respondents were actively interested in and/or participating in non-motorized boating activities and ranged in skill level from beginners to experts. Midwestern paddlers fall into a less skilled category and an intermediate skilled or above category. Most paddlers are willing to travel to enjoy a whitewater park. Over half of the respondents are willing to travel between 1.5 and 2.5 hours to visit a whitewater park.

The majority of respondents would also be willing to stay overnight in or near Granite Falls (Table 18). Of those wishing to spend the night, over half would likely camp - which could have monetary benefits for the state parks and associated services for campers (Table 19). In-town motels and hotels that cater to paddlers and are conveniently located near the park could also see a boost.

The vast majority of paddlers would use the park at least 1-5 days per year. Some paddlers would use the park more than 6 days per year (Table 17). One-third (33%) of paddlers surveyed currently participate 1 to 5 days per year. One-third of paddlers participate in paddling 6-10 days per year. One-third of paddlers participate in paddling more than 10 days per year.

The survey also suggests that, even within a group that skews towards experienced paddlers, most visitors would spend money in the Granite Falls area on equipment purchases, rentals, and lessons. The vast majority of Midwestern paddlers would be most comfortable with the entrance fee range of \$10 or less (Table 25).

**Table 16. Potential duration of drive to a whitewater park for regional/Midwestern boaters.**

Duration in hours	%	Count
Less than an hour	18.67%	28

1-1.5 hours	14.00%	21
1.5-2 hours	22.00%	33
Over 2 hours	45.33%	68

*n = 150*

**Table 17. Days per year regional/Midwestern boaters participate in boating.**

Days	%	Count
1-5	33.33%	50
16-10	20.67%	31
11-20	12.67%	19
More	33.33%	50

*n = 150*

**Table 18. Likelihood of regional boaters to stay overnight during a Granite Falls whitewater park visit.**

	%	Count
Yes	64.90%	98
No	19.21%	29
Not sure	15.89%	24

*n = 151*

**Table 19. Overnight accommodation preference of Midwestern boaters visiting Granite Falls.**

Overnight accommodation type	%	Count
Camping	50.74%	69
Motel	28.68%	39
RV park	5.15%	7
Other	15.44%	21

*n* = 136

**Table 20. Self-rating of paddling skills among Midwestern paddlers.**

Skill level rating	%	Count
Beginner	23.78%	34
Novice	18.88%	27
Intermediate	42.66%	61
Expert	14.69%	21

*n* = 143

**Table 21. Paddling gear ownership percentage among Midwestern paddlers.**

	%	Count
Yes	63.89%	92
No	36.11%	52

*n* = 144

**Table 22. Likelihood of Midwestern paddlers to rent paddling gear at a whitewater park destination.**

	%	Count
Yes	57.64%	83
No	25.69%	37
Not sure	16.67%	24

*n* = 144

**Table 23. Likelihood Midwestern paddlers would take a paddling skills class.**

	%	Count
Yes	66.67%	96
No	14.58%	21
Not sure	18.75%	27

*n = 144***Table 24. Number of days Midwestern paddlers intend to visit a whitewater park annually.**

Days	%	Count
0	4.17%	6
1-5	48.61%	70
6-10	24.31%	35
11-20	9.03%	13
more	13.89%	20

*n = 144***Table 25. Fee level Midwestern paddlers are willing to pay to use a whitewater park.**

Fee level (USD\$)	%	Count
\$0	10.42%	15
\$10 or less	61.11%	88
\$20 or less	28.47%	41

*n = 144*

**Table 26. Average annual expenditure on outdoor recreation and travel of Midwestern paddlers.**

Annual expenditure per respondent (USD\$)	%	Count
\$0	2.08%	3
\$1-\$200	22.22%	32
\$201-\$500	20.83%	30
\$501-\$1000	22.92%	33
\$1000+	31.94%	46

*n = 144*

**Table 27. Annual income of Midwestern paddlers.**

Annual income (USD\$)	%	Count
\$0-25,000	13.48%	19
\$25,001-\$40,000	15.60%	22
\$40,001-\$60,000	24.82%	35
\$60,001-\$85,000	19.86%	28
\$85,000+	26.24%	37

*n = 141*

**Table 28. Comments from Midwestern paddlers on the Granite Falls whitewater park development.**

Very excited by the prospect

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I would be very excited to have a whitewater park relatively close

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If you build it we will come. Kayakers are a great group of people.

---

American Canoe Association is a great resource and Instructors such as myself would love to volunteer or offer courses there!

---

I think it is a wonderful idea!

---

I would love to see it happen!

---

If you build it, they will come!

---

Good idea

---

I have an inflatable raft. consider these instead of tubes.

---

Iowa currently has 3 parks i paddle + 1 in OKC

---

Always looking for new places to paddle and would especially interested in whitewater classes!

---

Have shuttle service

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Really exciting..

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It would be the only RELIABLE whitewater for hundreds of miles. Please Do!

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When can I paddle it?

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Paddlers will use the facility as we travel from one part of the country to another.

---

A two hour drive is nothing for the type of park that could be built. We make annual trips to the area and would most likely go 6 or more times to this park.

---

I think it would be a great asset to the town of Granite Falls!

---

Sounds like a great idea, lots of fun.

---

I would be out there all the time and I don't even live in Minnesota. It would really be great to have whitewater access in the Midwest.

---

I have been to Wausau, Wisconsin Park and it is great.as they hold competition events there. If you can find the \$\$\$ go for it..

---

Im afraid of how contaminated the water is and how low it gets sometimes

---

Great idea!

---

I think it would be really great to take a weekend trip to go camping at/near a whitewater park! I live in the Twin Cities and would definitely go with my girlfriend or with friends. To elaborate on the cost question, I would be willing to pay some sort of entry fee to the park if it meant that rental fees for equipment were somewhat cheaper. Overall I think per person \$20-40 would be my general estimate of how much I'd be willing to spend on a

whitewater trip, depending on the duration and how much equipment we needed to rent (excluding gas, camping, and food; that amount would be for like entry fees and equipment rental).

---

Granite is an ideal location with developing amenities and creative leadership who are looking to provide an attractive setting for recreation seekers.

---

Your survey assumes people want this park. I would not let my children swim in this river.

---

Great idea! Would be awesome to bring this to southwest MN!

---

I think this would be a positive addition to Granite Falls not only for tourism purposes but to get more people to access the Minnesota River Valley.

---

we need it

---

It would be so much fun to have one so close! Great for our town as well

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I don't feel it is necessary in Granite Falls. There are alot better ways the money could be spent, like on our school systems, etc...

---

Yes yes yes!!!

---

So excited and can't wait for this to happen in granites fall

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Please continue with this effort. It would be an important cultural/recreational addition, not just for Southern MN, but all of MN and beyond.

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This is a great concept. Friends from the Cities would visit to use it

---

We need more destinations for tourism out in our area. Granite Falls is a beautiful town and is the gateway to the prairie areas that have a lot of hunting, fishing opportunities but we need more family type destinations to attract larger variety of visitors to the area. Every time we can make something like this happen out here we need to do it!!!

---

I am excited about the potential this project brings. I would like to see a fish ladder, and I would also like to see some sort of protection for the pelicans that always congregate at the bottom of the dam, so as not to disturb that.

---

It would be a great location for a whitewater park.

---

This town and area needs this

---

Great idea!

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We have the perfect spot for it along with the downtown following the river, the cooperative brewery coming up and nearby camping.

---

I have been boat for a decade now and have been to many whitewater packs across the country. WW parks are a great place to teach new boaters and to challenge experts.

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Need a showcase competition wave or no true enthusiasts will use the park.

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This is an ideal spot for recreational paddlesports development. Taking the cue from Manchester IA & Charles City IA there is an economic element that cannot be ignored. It is a great spot!

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Most kayakers will only frequent a ww-park when the local river levels are too low for paddling. The park should be designed to have adequate water even when other rivers do not. The Wausau ww-park is a good example.

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It would be a great asset to your community to build this

---

The interest is contingent on the features. I would want the park activity to engage me for at least half of a day.

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Terribly made survey. But great idea about the whitewater park!

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WW kayakers in MN routinely drive ~200 miles or more to visit the currently available WW Parks during the summer months when natural water is too low to sustain rapids. If a GOOD design is used you will attract boaters from hundreds of miles around. If you also have a Boat shop offering Kayak gear for sale and or rent, and venues for food & drink within walking distance of the park you'll become quite famous in the kayaking community. A nice consulting firm for WW Park design is <http://s2odesign.com>.

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Make it happen! It doesn't have to be expensive. Incorporate what you have and add features. Make the shuttle realistic without a lot of flat water at the end.

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Have the best company in the business design and build it, Shane Siegel of Recreation Engineering and Planning, Boulder Colorado

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Fantastic resource for the community!

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Kayakers are cheap folks, the free'r the better. Spending millions of dollars needed to build a good park never pays off for the city forking out the tax payer dollars. Talk to other parks and see their struggles. I say build it and I will use it, but don't complain because it can't sustain itself.

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Look at the success of almost every other ww park in the country, especially those found in CO. They are almost always a winning proposition for everyone involved.

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Build it and they will come. Also can be used for swift water rescue training fir first responders

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Mn is quickly becoming a destination for outdoor enthusiasts and paddling is a growing pay off that. It would be great to have a paddling park in our state to round out the Mt. Biking, climbing, and other extreme sport options.

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I have my own paddling gear, but I have friends that don't. If there were equipment rental near the park, I would invite friends who want to dabble.

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Let me just go over basic information about myself first. I grew up in Southwest Minnesota but moved to Sioux Falls about 10 years ago. I am familiar with the Granite Falls area since my grandpa lived there for most of the time I remember. So we went there and fished in Granite Falls quite a bit. I have been paddling for about 9 years. I dabble in flat water, river trips, and whitewater. Me and a group of friends usually make an annual trip up to the Granite Falls area. We usually stay in a hotel or camp ground in the area, depending on the weather, for a long weekend. We usually paddle the Minnesota River, Yellow Medicine River, Redwood River, and Beaver Creek all in one long weekend. I am also an ACA Level II River Kayaking Instructor with the group I formed in 2014 called Sioux Empire Paddlers. Sioux Empire Paddlers was first formed to help push getting a whitewater park in Sioux Falls. That is still our goal but with our club doing a ton of kids kayaking classes we changed our name so we don't frighten the parents too much thinking we will be putting kids on whitewater immediately.

Granite Falls is a great little town and area for paddlers. The area has a little bit of everything. Long trips down the Minnesota River to whitewater trips on other rivers in the area. Our group likes to paddle Yellow Medicine River, Redwood River, Ramsey Creek, and Beaver Creek. These are all natural rivers and depend a lot on rain and snow melt. Except the Minnesota River, the Minnesota River has a great flow most of the year. Which is nice so you can visit this section all season long.

As for getting a whitewater park on the Minnesota River in Granite Falls? I think it's a good idea if done correctly. There is the opportunity to attract new paddlers, tubers, boogie boarders, stand up paddle board surfers,

surfers, and canoers. But you also want to accommodate the experienced paddlers that want a place to go to push their skill limits. I think the Minnesota River has the opportunity to attract both the novice and experienced paddlers. I even think it could attract professional paddlers on a world level for competitions or maybe the Olympic tryouts in freestyle kayaking or Slalom.

I have traveled to several whitewater parks in Colorado, Wisconsin, and Iowa. When going to these parks I always look around to see what kind of people are there and maybe even try to chat with them. I have spoken to people that have never seen anything like it before and have a million questions. I have also met people that I ask them questions since they are a frequent user. All in all, I have noticed that it's not just one type of person going to these parks, but rather the whole community. You have the experienced kayakers, the novice paddlers with their brand new boat, families, young adults with their friends, the tubers (there are always a ton of tubers on a hot day), the fishermen (eddies make great deep holes for fish and easy access to these honey holes), the elderly waiting for the next person to slip up and take a plunge, the photographer waiting for that best shot, the mayor (have met the mayor of Manchester on a tube going down their whitewater park), and of course the swimmer that just want to jump into a standing wave. For these parks its more than just a dream for a kayaker, it actually brings the community together to do something outside. People don't worry about everyday life when they are at these parks they just want to have fun. With a park in Granite falls only a few hours away from so many bigger cities would be a cash cow on economic income. I have met people in Iowa of all places that have traveled from Colorado, Ohio and others just to try out Iowa's whitewater park. With the flow of the Minnesota River and the location of Granite Falls, I wouldn't be surprised if the estimated economic income would be close to 1.5-2 million.

I have done a lot of research on whitewater parks so let me know if you have any questions.

Thank You

Mitchell Joldersma  
5213 W 55th Street  
Sioux Falls, SD 57106  
605-759-5665  
Certified Level II ACA River Kayaking Instructor  
President of Sioux Empire Paddlers

### 3. Value of the Whitewater Park

#### 3.1 Direct Expenditures

*Estimated number of potential visitors*

Based on data from several whitewater parks in the Midwest, researchers estimated the number of potential visitors to the Granite Falls whitewater park development. Use estimates were derived from secondary data sources such as the Chamber of Commerce administrators or online resources reported by the city government. Charles City, Iowa has the closest and most comparable whitewater park experience available as a comparison for Granite Falls, Minnesota. These parks operate mostly during the May to September season; however, do experience use at other times of the year. Other whitewater parks exist in the Midwest as indicated below:

**Table 28. Midwestern Regional Whitewater Parks**

<b>Whitewater Park Location</b>
Charles City, IA
Manchester, IA
Elkader, IA
Wausau Whitewater Park, WI
Bear River Whitewater Park, Petoskey, MI
East Race Waterway, South Bend, IN
St. Francis River Whitewater Park - Fredericktown, MO

*Equipment ownership and expenditures*

Based on survey data, the majority (55%) of Granite Falls area utility customers spend over \$500 on outdoor recreation equipment or travel per year. The vast majority (86%) of local Granite Falls residents do not currently own paddling equipment. Table 22 indicates that the majority (58%) of regional paddlers expressed interest in renting paddling gear. Some 67% of regional paddlers own their own paddling equipment (Table 21). Table 29 shows the cost calculation for paddling equipment such as a completely new kayaking package with boat, paddle, PFD, helmet and extra essentials. We estimate the cost of purchasing a typical set of new kayak equipment to be about \$2,000. This estimate is based on a detailed review of market pricing. Over the course of three to five years, we amortize the equipment costs given an average of 15 to 20 use days annually. The average equipment cost ranges between \$20 and \$44 per user day. The midpoint of this range is \$32 per use day, the figure we use for calculations (Stratus Consulting, 2005).

**Table 29. Cost of whitewater boating equipment (2016USD\$)**

<b>Gear purchase cost</b>	<b>Useful life years</b>	<b>Average user days / year</b>	<b>Total gear days over use life</b>	<b>Kayak gear cost per user day</b>
\$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 additional cost components relate to travel costs. Table 30 shows automobile costs for roundtrip distances of 30, 100, and 300 miles. We used the federal reimbursement rate for 2016 of \$0.0608 per mile. Assuming 75% of the boaters using the park are local and 25% of the boaters come from outside of Yellow Medicine County with an average roundtrip travel distance of 300 miles. The 75%/25% split between locals and nonlocals is based on consultation with other whitewater park users/chamber of commerce administrators in the Midwest. Most local boaters within the local area of Granite Falls would drive an average of 30 miles roundtrip such as to and from Montevideo, Minnesota. The 300 mile roundtrip estimate for nonlocal boaters considers most visitors coming to Granite Falls would drive from the Twin Cities, Sioux Falls or other Minnesota municipalities such as Mankato. The composite average roundtrip travel distance for all users is estimated to be about 100 miles.

**Table 30. Cost of automobile travel to whitewater park (2016USD\$)**

Average round trip miles to parks	Auto cost per mile <sup>a</sup>	Auto cost <sup>b</sup>
30	\$0.608	\$18.24
100	\$0.608	\$60.80
300	\$0.608	\$182.40

<sup>a</sup> Federal reimbursement rate as of January 1, 2016

<sup>b</sup> Round trip mile multiplied by cost per mile

#### *Potential for outfitter rentals and tubing*

Several whitewater parks generate more revenue by offering instruction, equipment purchase and rental, food and shuttling to boaters. Given only one outfitter on the Minnesota River offers such services and is located approximate two hours drive from Granite Falls in Mankato, Minnesota, the potential for this type of business to be established is high. Retail and rental sales typically offer products and services seasonally when the river flow is optimum, the weather and water temperatures are warmer, and students are out of school.

Many users of whitewater parks may bring family and friends or need an alternative to non-motorized boating such as tubing. Tubing is a sport many beginner water recreationists choose before paddling a watercraft. Expenditures for tubing in at waterparks in the Minnesota are \$10 per rental. The primary reason to visit Granite Falls whitewater park may not be tubing for most users surveyed in the region. Half of local survey households noted at least 1 to 2 household members or more would be interested in tubing at the whitewater park.

#### *Potential for retail equipment sales*

A future study on sales and use tax receipts could be conducted to determine the impact of the whitewater park development on equipment sales. Those with children in the household are more likely to have interest in whitewater park use and spending money for participation, lessons or equipment. Some households with adults younger than 60 with or without kids would not use the park or spend money, but they do currently spend money on equipment/travel and days outside recreating. This group is more of a mixed bag. Again, the study did not ask whether or not folks were for or against the development of the whitewater park, rather, it asked if they would use it, how much they might spend on the park or equipment/lessons, etc.

Granite Falls might look into another study to ask folks about tradeoffs regarding a polluted river with no recreation opportunities versus a restored river with recreation access. Based on survey respondents' comments concerning water quality in the Minnesota River,

Granite Falls could consider educating the public on why they would develop the whitewater park and how it would restore the health of the river.

Households with residents over the age of 60 who do not currently participate in outdoor recreation activities are less likely to have interest in whitewater park use and spending money for participation, lessons or equipment. Some Granite Falls residents are strictly opposed to the whitewater park development based on survey responses and comments. Other Granite Falls residents commented that they think the development is a good idea, but feel they are unable to participate in paddling. Some residents suggested a bike/walk path development. Many residents support of river revitalization as a whole, and not necessarily the whitewater park, in particular.

Added value comprises the amount additional to consumer surplus which could be considered into the total value of a park development. In the case of the Granite Falls Whitewater Park Development, several additional added value factors could be considered. Within the comments of the regional paddling group surveys as well as in consultation with regional whitewater parks such as Charles City (Iowa) Whitewater, several respondents recommended offering special events at the park to increase revenue within the community of Granite Falls.

The City of Granite Falls considered the impact a whitewater park development could have on downtown revitalization, associated assets (e.g., museums, casinos, etc.), the region/state as a whole, and watershed health within this study. Although this report stated the current property values and tax for Yellow Medicine County, the actual property value, tax, jobs and quality of life impact could not obtain a valuation until after whitewater park development occurred. This information is typically gathered from reports of fluctuation in property sales, taxes, jobs, and resident attitudes toward the community of Granite Falls.

The City of Granite Falls could consider previous research and reports from similar park developments regarding the percentage increase in any of those factors. Granite Falls could additionally consider, for example, people willing to spend more money on things associated with the visit to the park than to the entrance fee itself. The City could also consider methods and implications for sustaining the park other than solely on user fees. For example, several other Midwestern whitewater parks utilize special events, boat liveries, education / instruction and rental / outfitting services to generate revenue.

Granite Falls could incorporate the amplified impact a whitewater park development would have on the community from complementary improvements of the downtown area through increased revitalization interest, increased recreation access through biking/walking trails or picnic areas, and watershed health through awareness of park users or spectators concerned about both environmental and public health issues related to water quality. Information and online resource links related to previous successful river revitalization projects and whitewater park developments is located in the Appendix of this report.

### **3.3 Consumer Surplus**

Utilizing the “Benefits Transfer” method to timely calculate an approximation of value is a standard practice employed by natural recreation resource economists. Benefits Transfer method allows researchers to obtain values per unit of use for similar types of activities from studies conducted for similar experiences and sites. In situations where a park does not exist and little time is allocated to obtain primary research data from a new survey or econometric model, Benefits Transfer multiplies the unit values from previous studies by the estimated amount of use. Consumer surplus is calculated from the unit value for an activity such as non-motorized

boating. The Benefits Transfer database approach helps avoid influence from outliers and the user day values reflect the availability of similar or substitute sites for a particular recreation experience.

The database reports values for the Midwest as well as four other regions of the United States and Canada (Rosenberger, 2011). Dr. John Loomis previously compiled a database in 1999 as a meta-analysis of many individual studies to develop an estimate of central tendency by exploiting and combining the strengths of multiple studies utilizing different valuation methods. Researchers directly consulted with Dr. Randy Rosenberger, an expert and colleague of Dr. John Loomis of Colorado State University, who developed a database of peer-reviewed recreational valuation literature data to ensure transfer of benefits. According to Rosenberger (2011),

“The database currently contains 352 documents of economic valuation studies that estimated the use value of recreation activities in the U.S. and Canada from 1958 to 2006, totaling 2,703 estimates in per person per activity day, adjusted to 2010 USD. Twenty-one primary activity types are provided, with several more available if segregated by activity mode, resource type, primary species sought, or little studied activities (i.e., ‘other recreation’ has an additional 22 activities identified). These recreation use value estimates are measures of net willingness-to-pay or consumer surplus for recreational access to specific sites, or for certain activities at broader geographic scales (e.g., state or province, national) in per person per activity day units— this database does not contain information on marginal values for changes in site quality or condition. The database is currently offered as an Excel workbook containing the database and coding protocols. It is currently sorted by primary activity by region—of course, you may download and sort it however you wish. The bibliography cross-references the database via the document code.”

Four studies focused on non-motorized boating within the Midwestern region of the United States from the Oregon State University benefits transfer database were identified for a consumer surplus value estimate. The studies focused on a primary activity of non-motorized boating in Minnesota and nationwide (Hellerstein, 1980; Hellerstein, 1980; Hellerstein, 1980; Mathews, Homans & Easter, 1997). The studies respectively resulted in \$7.34, \$10.13, \$15.29, and \$39.00 per person per day in 2010 USD (Rosenberger, 2011). Dividing the sum of the studies by four, the mean value per person per day for the “Midwest” region is \$18.09 per person per day in 2010 USD (Rosenberger, 2011). The national average is reported by the database to be \$41.08 per person per day and the average in Canada is \$73.42 per person per day for comparison in 2010 USD (Rosenberger, 2011).

### **3.4 Preliminary Estimate of the Beneficial Value of the Granite Falls Whitewater Park**

To project use for the Granite Falls Whitewater Park, researchers made an estimate of possible use based on the primary survey data and secondary use data from other Midwestern whitewater parks. For the 2017 boating season, the City of Granite Falls would obtain boater use data to adjust the figures of Table 31 to reflect updated use and beneficial value. Table 31 displays the estimated value of future beneficial uses of waters diverted in the Granite Falls whitewater park on the Minnesota River. The benefits will be revised once new information on boater use is collected after the Granite Falls whitewater park is developed.

Annual direct expenditures from \$50 per user day on equipment, automobiles, and travel time for boaters would be \$500,000. The direct expenditures related to nonlocals staying in Granite Falls is estimated to be \$375,000. We used a \$150 per day per person estimate for a local overnight stay including expenditures such as lodging and food. Consumer surplus with a use level of 10,000 by \$18.09 per recreation use day would equal \$180,900.

Other economic benefits as added value could include nonevent spectators, enhancement of local property values, improved community identity and quality of life, water quality awareness/improvement, and an increase in recreation access for other development / activities such as fishing, trail hiking/biking, dog walking and picnicking).

The total potential benefits of the whitewater park at Granite Falls are over \$1,055,900 per year. Due to the limitations of this study, this is an extremely conservative estimate serving as a baseline beneficial value to Granite Falls. This is a reasonable estimate given Charles City, Iowa reports an economic stimulus of \$764,000 annually (ranging up to \$800,000). Charles City Whitewater Park hosts at least two events per year and is situated further away from municipalities as large as the Twin Cities and Sioux Falls. When adding in economic stimulus of use and special events, increase in boaters, nonevent spectators, and other value added factors, the total beneficial use value per year would increase significantly.

Applying the multiplier of 1.75 to the out-of-pocket expenditures of \$50 per boater day (excluding the value of travel time) and nonlocal expenditures related to lodging, dining, and shopping, we would obtain an annual incremental economic stimulus value. The net impact on the local economy beyond direct expenditures is obtained by reducing the multipliers by 1.0 (to 0.5 and 1.00).

**Table 31. Estimated value of future beneficial uses of waters diverted in the Granite Falls whitewater park on the Minnesota River (in 2016 USD\$).**

<b>Beneficial use category</b>	<b>Level of use<sup>a</sup></b>	<b>Monetary unit value</b>	<b>Beneficial value<sup>b</sup></b>
Kayakers, canoers, SUP and tubers	10,000		
Expenditures (locals / nonlocals)		\$50	\$500,000
Expenditures (nonlocals)		\$150	\$375,000
Consumer surplus		\$18.09	\$180,900
Economic stimulus (multiplier effect)			
Special events			
Increase in boaters			
Nonevent spectators			+
Increase in property values			+
Community identity, quality of life			+
Water quality awareness, education and improvement			+
Increase recreation access for other development / activities (fishing, trail hiking/biking, dog walking, picnicking)			+
<b>Total beneficial use values per year (without economic stimulus or special event calculation)</b>			<b>\$1,055,900</b>

<sup>a</sup> Total user days per year

<sup>b</sup> Added value = “+”

## 4. References and Website Resources

Minnesota State University, Water Resources Center. 2016. Minnesota River Virtual Tour Map. Retrieved 07/31/2016 at <http://mrfdc.mnsu.edu/minnesota-river-virtual-tour-map>

Outdoor Foundation. (2016). Research Participation Report. Retrieved on July 18<sup>th</sup>, 2016 from <http://www.outdoorfoundation.org/pdf/ResearchParticipation2016Topline.pdf>

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Rosenberger, R. (2011). Recreation Use Values Database. Retrieved on July 25<sup>th</sup>, 2016 from <http://recvaluation.forestry.oregonstate.edu/>

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[http://www.co.ym.mn.gov/index.asp?Type=B\\_BASIC&SEC=%7BD0C5D9DC-B071-4C03-B23B-33D14292C72A%7D](http://www.co.ym.mn.gov/index.asp?Type=B_BASIC&SEC=%7BD0C5D9DC-B071-4C03-B23B-33D14292C72A%7D)

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<http://iowarivers.org/powerful-examples-and-guidance-for-modifying-dangerous-dams/>

<https://www.planning.org/cityparks/briefingpapers/economicdevelopment.htm>

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<http://www.granitefallsnc.com/docs/2009FinalMarketandBusinessReport.pdf>

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## 5. APPENDIX

Hellerstein, D.M.	Using count data models in travel cost analysis with aggregate data.	Boundary Waters Canoe Area	1980	7.94
Hellerstein, D.M.	Using count data models in travel cost analysis with aggregate data.	Boundary Waters Canoe Area	1980	10.13
Hellerstein, D.M.	Using count data models in travel cost analysis with aggregate data.	Boundary Waters Canoe Area	1980	15.29
Mathews, L.G., F.R. Homans and K.W. Easter.	Reducing phosphorus pollution in the Minnesota River: How much is it worth?	Minnesota Valley National Wildlife Refuge	1997	39.00

### COMPARABLE WHITEWATER PARKS

#### Charles City Whitewater Park

River/stream: Cedar River Location: Charles City, Floyd County Owner: City of Charles City Height: 7'  
Length: 260' Age: 77 years – constructed in 1934 and modified in 2011 Historic uses: “Beauty” dam;  
recreation Project type: Whitewater park Project goals: Safety; recreation; economic development; fish

passage; habitat improvement Project designer: Recreation Engineering and Planning of Boulder, CO  
Project contractor: Minnowa Construction of Harmony, MN Start and completion dates: Winter 2010 –  
Summer 2011 Miles of river reconnected: 13 Closest river barriers: Upstream – Charles City Main Street  
Dam; downstream – Cedar Lake Dam Cost: \$1 million Collaborators: Community residents,  
organizations, and businesses; City of Charles City; Floyd County; ISU; Iowa Whitewater Coalition; Iowa  
Great Places; Iowa DNR; FEMA

Like many Iowa towns, the river running through Charles City has caused great devastation to homes and businesses during flood season. After the floods of '93, '96 and '99, Charles City bought 28 acres along the river using FEMA funds, which it then maintained as green space. Improvements were made, including a walking and bike trail, but the area was rarely used. Then, in 2001, Charles City approved a 7% hotel/motel tax with 40% of revenues allocated to parks and recreation and 60% to tourism. With the additional resources, the Parks and Recreation Department decided to explore developing this green space in 2006. The department worked with Iowa State University and architectural firms to explore options. One firm included in its proposal a whitewater feature, so the city set out to explore what whitewater kayaking was all about. They were surprised to find there are 4 million kayakers in the U.S.; kayakers will travel up to eight hours many times a year to kayak; kayaking is expected to grow 24% through 2024; and kayakers spend \$292 per trip, on average. What's more, Charles City seemed like the perfect place to host such an attraction: with the river running through the heart of downtown, river users could easily access food, gas, accommodations, and other amenities. Suddenly, the city was considering a whitewater park with several features. Due to safety issues and federal floodway regulations, the dam had to be removed. The city held many public hearings and special meetings to provide information and receive input from the community. It was a tough sell at first, especially to anglers who fished at the dam. But in December 2007, the city council voted to remove the dam and construct a whitewater park – the first in Iowa. An engineering firm drafted a preliminary plan in April 2008, but the project was soon halted because of flooding. The city had to divert funding to recovery efforts, and grants were lost. In addition, the permitting process was delayed. By 2010, grant funding was restored, and construction work began. Today, the one-quarter mile whitewater park boasts three distinct features for paddlers and tubers of all skill levels. The design is naturalistic, with rocks supplied from a quarry just five miles away. The once-steep banks were restored to a more natural state and provide better access to the river. Because fish habitat, fish passage, and access to the water's edge improved, angling has increased. The whitewater area is just one part of the surrounding Riverfront Park, which includes an amphitheater, ravine play area, picnic shelters, stormwater fountain, and labyrinth. **The whitewater park and annual competitive events draw river recreation enthusiasts from across the Midwest, which the city estimates has an annual**

economic impact of \$764,000. Charles City was designated an Iowa Great Place and received numerous awards for this project, including Iowa Rivers Revival's "River Town of the Year" award and the EPA's "Smart Growth Achievement" award.

"I have only received positive feedback from the community concerning the dam conversion. I consider the project a success due to the elimination of a safety hazard while still providing recreational opportunities at the site." – Wayne Schwartz, City of Boone Engineer

### **Elkader Whitewater Park**

River/stream: Turkey River Location: Elkader, Clayton County Owner: City of Elkader Height: 4'  
Length: 235' Age: 74 years – constructed in 1940 and modified in 2014 Historic uses: "Beauty" dam; recreation Project type: Whitewater park Project goals: Safety; recreation; economic development; fish passage; habitat improvement Project designers: RiverRestoration.org of Carbondale, CO; MSA Professional Services of Ankeny, IA Project contractor: C.J. Moyna and Sons of Elkader, IA Start and completion dates: Fall 2013 – Spring 2014 Miles of river reconnected: 38 Closest river barriers: Upstream – Big Dam in Elkader; downstream – none Cost: \$389,900 (in-water work only) Collaborators: Community residents, organizations, and businesses; Clayton County; Vision Iowa; Iowa DNR

On June 10, the Flood of 2008 hit Elkader. The river rose 18 feet and inundated scores of homes and businesses, causing millions of dollars in damage. Afterward, 32 houses in the Turkey River floodplain were bought out, and the city held visioning sessions to determine what the community now wanted along 11 acres of the riverfront. Ideas included a soccer field, a playground, an amphitheatre, trails – and a whitewater park. The original plan called for the Little Dam to stay in downtown Elkader. But a feasibility study determined that in order to acquire a "no-rise certificate" – required by FEMA to demonstrate that any change to the floodway would not result in higher water elevations – the dam had to be removed. Stream biologists gave public talks on the benefits to fish of dam removal, and a historic review concluded that the dam was not eligible for the National Register of Historic Places. Yet, the idea of removing the Little Dam bothered many in the community who appreciated its history and fishing spots. A petition circulated but never gained enough signatures to go before the city council. The project received strong support, too: from the Cultural and Entertainment District, comprised of downtown businesses; the Turkey River Recreation Corridor, which includes the towns of Elgin and Clermont; Main Street Iowa; Iowa Great Places; and many individuals, businesses, and organizations in Elkader. After numerous public hearings, open houses, and council meetings, the city council voted in 2013 to remove

the dam and construct the whitewater feature. Since the park's completion in 2014, river usage has grown. Visitors from across the state and beyond have visited the town to test out the park's signature feature, the "Gobbler," a 22-foot constant wave that is perfect for freestyle kayaking, boogie boarding, and tubing. People interact with the river in other ways, too, according to Tom Gifford, a local who helped initiate the project. "It's not uncommon to see a dozen to 15 people just hanging out by the river," he said, whether they are watching play boaters, fishing, walking dogs, picnicking, or playing on the sandbar. "None of that ever happened before." According to DNR biologist Gary Siegwarth, the project has improved fishing by adding more shoreline for anglers and creating deep water habitat to shelter gamefish. The river is also more accessible: previously, the steep drop beneath a riverside retaining wall made it difficult to reach the river, but an accessible ramp and viewing platform now make it possible for everyone to enjoy it. Bank stabilization, plantings, a walking trail, and river access on the other side of the river are ongoing projects. Local officials have observed that the number of trail users, campground visitors, out-of-town shoppers, and hotel/motel tax revenue have all gone up. According to Roger Thomas, the Elkader Development Corporation Director, there also has been growing interest in opening new sports stores, too.

"There wasn't really anywhere to fish but maybe a couple of spots. Now on both sides, you've got room for 15 anglers, so there's a lot more room to fish from the bank and a lot more accessibility to the area than before." – Mike Plumley, local angler

"It's gotten me in the water, and I feel much better and healthy." – Dan Beck, local kayaker

### **Goldfield River Park Dam**

River/stream: Boone River Location: Goldfield, Wright County Owner: City of Goldfield Height: 4.5'  
Length: 50' Age: 80 years – constructed in 1934 and modified in 2014 Historic use: Impoundment Project  
type: Rock arch rapids Project goals: Safety; recreation; fish passage; stream stabilization; habitat  
improvement Project designer: Iowa DNR Project contractor: Lund Construction of Eagle Grove, IA Start  
and completion dates: May 2014 – August 2014 Miles of river reconnected: 19 Closest river barriers:  
Upstream – none; downstream – Webster City Dam Cost: \$64,000 Collaborators: City of Goldfield,  
Wright County Conservation, Wright County Soil and Water Conservation, Wright County Supervisors,  
Women's Club, Commercial Club, Goldfield Legion, current residents, school alumni, business  
community, and Iowa DNR

Goldfield's dam mitigation project started over coffee one day when two retired residents, Joe Skinner and Orville Steffenson, decided that something had to be done about the deteriorating dam at Goldfield

River Park. The dam was constructed in the 1930s by a group of citizens so that a local tour boat could take passengers up and down the Boone River. The dam negatively affected fishing, according to locals, and over the years, many of the boulders holding the dam together had washed out. Repairing the dam was not an option, since neither the city nor the state would provide funding for such a project. However, Skinner and Steffenson's alternative looked even better: convert the dam to rock arch rapids to let fish migrate upstream at all times of the year; slow erosion; and allow community members to walk, tube, paddle, and fish along the Boone River. The project received unanimous support from the city council and the Wright County Conservation Board. To raise money, the duo posted flyers around town and wrote a fundraising appeal in a newsletter sent to Goldfield High School alumni. About \$100,000 flowed in from businesses and private donations. Because farmers donated rocks and boulders, the project came in under budget. The rapids were completed in August 2014, and the area has seen more use and restored community pride in the park along the river. Now, with funds to spare, additional plans to revitalize Goldfield River Park are underway. Mimi Cameron, a Goldfield resident, remembers the park in its glory days. "The park was the center of my life when I was a kid. We lived at that park," she said. It featured playground equipment, shelters, a merry-go-round, Renaissance fairs, and Chautauqua assemblies. But all of that changed as annual floods gradually wiped out the park's amenities and residents stopped visiting. Cameron is hopeful that the once vibrant park will make a comeback. The city is investing in flood-resistant picnic tables, benches, and shelters that will be anchored with concrete. The park will also be handicap accessible. Two boat ramps will be placed close to the rapids, making it easier for tubers, kayakers, and canoeists to enter and exit the river. With these improvements plus the removal of the dam, there have been talks of designating the Boone River as a water trail. "It has a lot of potential," Cameron said. "Not every town has a beautiful river going through it."

"As an impetuous twenty-something girl, I once canoed over our old and dangerous dam during high raging water. Fortunately, I made it out with only a large hole in the canoe caused by hitting one of the many big boulders. I am so thrilled now for the next generation to try our new safe and adventuresome rapids. It has to be a blast!" – Sonna Johnson, Goldfield resident

## **Klondike**

River/stream: Big Sioux River Location: Klondike, Lyon County Owners: States of Iowa and South Dakota Height: 12' Length: 175' Age: 130 years – constructed in 1883 and modified in 2013 Historic uses: Flour mill; hydroelectricity Project type: Rock arch rapids Project goals: Safety; water supply; fish passage; habitat improvement Project designer: Iowa DNR Project contractor: Merryman Excavation of

Woodstock, IL Start and completion dates: January 2013 – May 2013 Miles of river reconnected: 38  
Closest river barriers: Upstream – natural falls in Sioux Falls; downstream – Canton Rubble Dam Cost:  
\$580,000 Collaborators: Lyon and Sioux Rural Water System, Inc.; Lyon County Conservation Board;  
Lyon County; Iowa DNR; South Dakota Environmental Bureau; South Dakota Game, Fish and Parks;  
South Dakota Canoe and Kayak Association; FEMA; US Fish and Wildlife Service

The Klondike Mill Dam was no match for the regular flooding of the Big Sioux River. Originally constructed in 1883 for the Kruger Flour Mill and converted in 1922 to create hydropower, the dam required numerous repairs and reconstructions throughout its life – even after it had ceased its economic functions in the 1930s. Stones and concrete regularly washed away with each spring flood, and water flowed through the dam. It was listed on the National Register of Historic Places in 1975 but was removed from the list in 1989 due to its extremely degraded condition. The dam also was the largest barrier to fish passage on the Big Sioux River. A study found nine species of fish below the dam that were not found upstream, including the blue sucker and silver chub, which are identified as species of greatest conservation need. After the 2008 flood, the dam was undermined yet again. This was of special concern to the Lyon and Sioux Rural Water System, which relied on the dam to maintain water elevations upstream for six alluvial wells that supply water to rural parts of Lyon County. The rural water system contacted the Iowa Department of Natural Resources and South Dakota Game, Fish, and Parks to consider options to address the deteriorating dam. The overwhelming desire from canoeists and kayakers was to remove the dam completely for safety reasons. However, preserving the upstream pool of water was also important for the local drinking water supply. As a result, conversion to rock arch rapids was chosen to accommodate all needs. In the midst of the planning process, another flood in 2009 damaged the dam, forcing temporary repairs which entailed stacking rocks above the dam to maintain the water supply. Because of this flood, FEMA was able to provide funding for the dam mitigation project. To comply with the National Historic Preservation Act, a historic review was conducted. The review determined that the only remaining significant structure was an intact mill race foundation, which was preserved. Following the dam's conversion to rock arch rapids, fish have access to 38 more miles of the Big Sioux River and 1,840 miles of tributary streams to find essential habitat and breeding grounds. This has had a positive effect on fishing, and more anglers are using the river now. The rapids also reliably maintain water levels for the rural water system and provide safe passage for canoeists and kayakers. Steep banks were sloped back and replanted to minimize erosion and improve river access. The Lyon County Conservation Board added a day-use area and made bank improvements to the Iowa side of the Big Sioux River. Now that the safety hazard of the dam is gone, the conservation board is also working on developing a water trail between Sioux Falls and Sioux City.

“The conversion of the dam changed it from a drowning machine to a passable waterway.” – David Finck, South Dakota Canoe and Kayak Association

### **Manchester Whitewater Park**

River/stream: Maquoketa River Location: Manchester, Delaware County Owner: City of Manchester Height: 9' Length: 185' Age: 111 years – constructed in 1904 and modified in 2015 Historic uses: Grist mill; hydroelectricity Project type: Whitewater park Project goals: Safety; recreation; economic development; fish passage; habitat improvement Project designers: Recreation Engineering and Planning of Boulder, CO (for the whitewater park); AHTS Architects of Waterloo, IA (for bank and amenity improvements) Project contractor: Taylor Construction, Inc. of New Vienna, IA Start and completion dates: September 2014 – May 2015 Miles of river reconnected: 24 Closest river barriers: Upstream – Quaker Mill Dam (removal projected to begin in late 2016); downstream – Water Gauge Dam Cost: \$2.1 million Collaborators: Community residents, organizations, and businesses; Manchester Good to Great; City of Manchester; Delaware County; Vision Iowa; Iowa DNR; Army Corps of Engineers

“The whitewater project was promoted by the Manchester Good to Great organization as a means to continue to be aggressive in the improvement of our community with a mindset that a recreational/tourism-focused project would help draw people to our community. Not only is this project an attraction for visitors, but an additional quality of life factor which we know will make Manchester a place people wish to consider when looking to expand their business or relocate their families. We feel this project will have a long-term positive impact on our community, and the fishing is great.” – Ryan Wicks, Manchester Good to Great River and Recreation Committee Chair

It all began back in 2008 with “Manchester Good to Great,” a volunteer organization launched by community leaders. Using the book *Good to Great* by Jim Collins as a guide, the group held a number of public charrettes (guided planning meetings) to evaluate the community and envision the town’s future, asking: How can we reverse our declining population? How can we improve the community’s quality of life? How do we transform Manchester into a place where families and entrepreneurs want to call home? As a result of these charrettes, nine subcommittees were formed to address these questions. One of the committees was the River and Recreation Subcommittee, where the idea of a whitewater park soon gained traction. Over the next several years, the subcommittee studied this possibility. They raised money to conduct a feasibility study, hired a consulting firm to develop a conceptual plan, researched and visited other communities, analyzed economic impacts, and met with DNR river programs staff and river

biologists. In 2010, they presented a proposal for a whitewater park to the city council, demonstrating that it would improve safety by removing the low-head dam, enhance fish habitat and numbers, and boost economic development. “It was a way for [the subcommittee members] to say that this will improve the downtown and turn the river that was kind of a backyard into the front yard,” said City Manager Timothy Vick. “They were able to show that for every person in the water, there are usually four people on the bank.” The city council unanimously supported the initiative and committed to funding one-third of the cost. Listening to the community was key in gaining the public’s confidence in the project. Residents wondered if flooding would worsen, how the look and feel of downtown would change,

if the upstream water level would decrease, and how fishing would be affected. By addressing these concerns at informational meetings, many who were wary at first became avid supporters of the park. Within a year, the project raised \$630,000 in donations from individuals, businesses, and organizations in the community. The remainder of the funding came from grants and partnerships. The city held a public hearing, approved plans and contracts, and obtained permits. Construction started in September 2014 and continued throughout the winter and spring to create six 18-inch drop features, rocky pools, bank terraces, and access points along 800 feet of the Maquoketa River. The park was completed in May 2015, making Manchester home to Iowa’s third – and longest – whitewater park. The park attracts a wide array of users: kayakers, tubers, anglers, boogie boarders, swimmers, canoeists, pedestrians, joggers, bikers, picnickers, and spectators. The large limestone boulders along the shoreline provide ample opportunity for visitors to sit beside and connect with the river. The drops and pools create deep, aerated water which is great for fish habitat. Improved river access makes the whitewater park an excellent place to fish in cooler weather, an ideal time when other river users aren’t blocking places to cast. What’s more, the park attracted two businesses before it was even open: The Watershed, a kayak and canoe rental store, and Franklin Street Brewing Company, a local microbrewery that moved into a historic building just across the street. By turning the river into a focal point of the community, Manchester is creating for itself a strong and healthy future. Iowa Rivers Revival named Manchester “River Town of the Year” in 2015 in recognition of these efforts.

“The Manchester Whitewater Park is a great example of fish habitat improvement and fishing access enhancement. Modifying the old dam has improved habitat by allowing fish to move up and down river for spawning, overwintering, and recolonization. Structures used to create the park provide easy “walk-to” access on the Maquoketa River, and the pools, runs, and currents associated with the project are attractive to popular game fish, including smallmouth bass and walleye. The Manchester Whitewater Park puts anglers and fish together at the same location, and that is a recipe for fishing success.” – Dan Kirby, DNR Biologist