

Modifications to Low-head Dam Story City, Iowa



**Iowa Department of Natural Resources
Iowa Water Trails Grant Program**

Submitted by the
City of Story City in conjunction with
the Skunk River Paddlers
and the Story County Conservation Board

IOWA WATER TRAILS PROGRAM GRANT APPLICATION

Postmark Deadline: Last business day of January

PROJECT NAME **Skunk River Water Trail**
Modifications to Low-head Dam, Story City, Iowa

APPLICANT NAME **City of Story City**

CONTACT PERSON **Carol Williams, Special Projects Ranger, Story County Conservation**

ADDRESS (street address required) **56461 180th Street**

CITY **Ames** STATE **Iowa** ZIP CODE **50010-9451**

PHONE (day) **515-232-2516** PHONE (evening) **515-232-5607**

E-MAIL **cwilliams@storycounty.com**

TOTAL IOWA DNR WATER TRAILS & SAFETY

GRANT AMOUNT REQUESTED	\$ 26,660	
FUNDS SECURED FROM OTHER SOURCES	\$ 37,426	NRT grant
	\$ 5,000	City of Ames
	<u>\$ 2,000</u>	<u>Mannatt's, Inc.</u>
	\$ 44,426	Total to Date
FUNDS NEEDED FROM OTHER SOURCES	\$ 6,000	Kiosks (grant submitted)
TOTAL COST OF PROJECT	\$ 77,086	

TOTAL NUMBER OF TRAIL MILES TO BE CONSTRUCTED OR AFFECTED **28**

B. APPLICANTS

The City of Story City is working closely with the Skunk River Paddlers and Story County Conservation on the Skunk River Water Trail project.

C. NARRATIVE

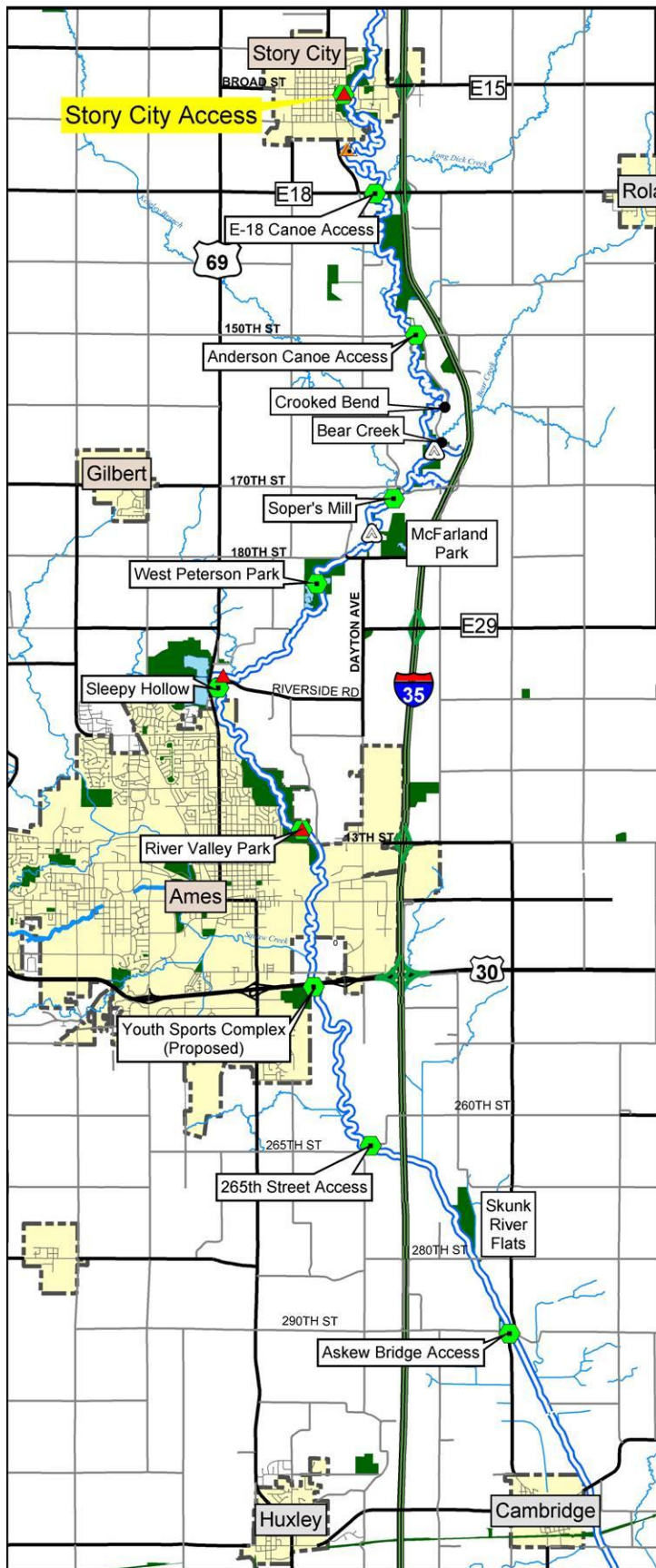
This project involves the conversion of an existing low-head dam to a rock “rapids.” Glacial field stones will be placed below the dam at Story City, tapering downstream at a 20:1 slope. A series of rock weirs will be formed to direct the main flow away from the stream banks, reducing bank erosion, creating stream habitat, and allowing for the safe passage of canoes and kayaks.

Rock weirs have been constructed in Iowa and around the country to reduce bank erosion, prevent scouring of river and stream bottoms, and to restore balance to the hydrology of our altered waterways. Properly designed and constructed these weirs will reduce erosion, provide for sediment transport, enhance habitat for fish and other aquatic species, and provide for safe passage of paddlecraft while producing natural wave features for playboaters and whitewater enthusiasts.

The Story City dam is the starting point of the Skunk River Water Trail and is situated in a scenic setting in Story City’s South Park, just below a stone footbridge built in 1936 by the Work Projects Administration (WPA). Local residents are known to paddle above the dam, but passage over the existing sheet pile structure is rarely possible or advisable. It is hoped that this project will serve as a model for dangerous low-head dam conversions around the state.

The South Skunk River from Story City to Ames has been promoted for canoeing and fishing by both the Story County Conservation Board and the Iowa Department of Natural Resources (IDNR) for many years. Story County Conservation has maintained canoe accesses along that section of the South Skunk River since the 1970’s. The Skunk River Paddlers received a National Recreational Trails grant in 2003 for the Skunk River Water Trail. Since then, the group has worked diligently to improve access to the Skunk River. During 2005, the paddlers made improvements to five areas utilizing over 300 volunteer hours. Additional funding was received from private sources in the form of contributions for food and drinks for workdays and donated equipment time. Recently a grant was submitted to the IDNR for additional funding for informational displays (kiosks) at each of the 11 accesses. The Skunk River water trail is being developed using IDNR Water Trail guidelines.

D. MAP OF PROJECT AREA – Water Trail



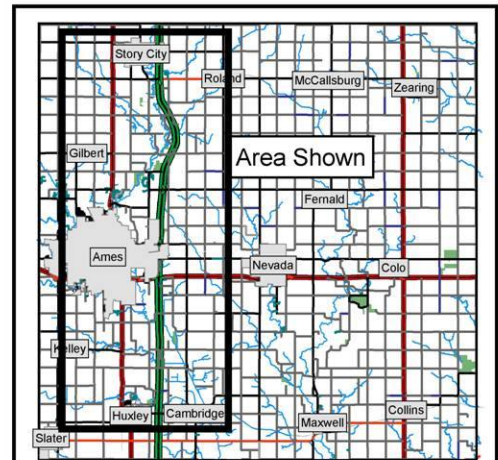
South Skunk River Water Trail

Legend

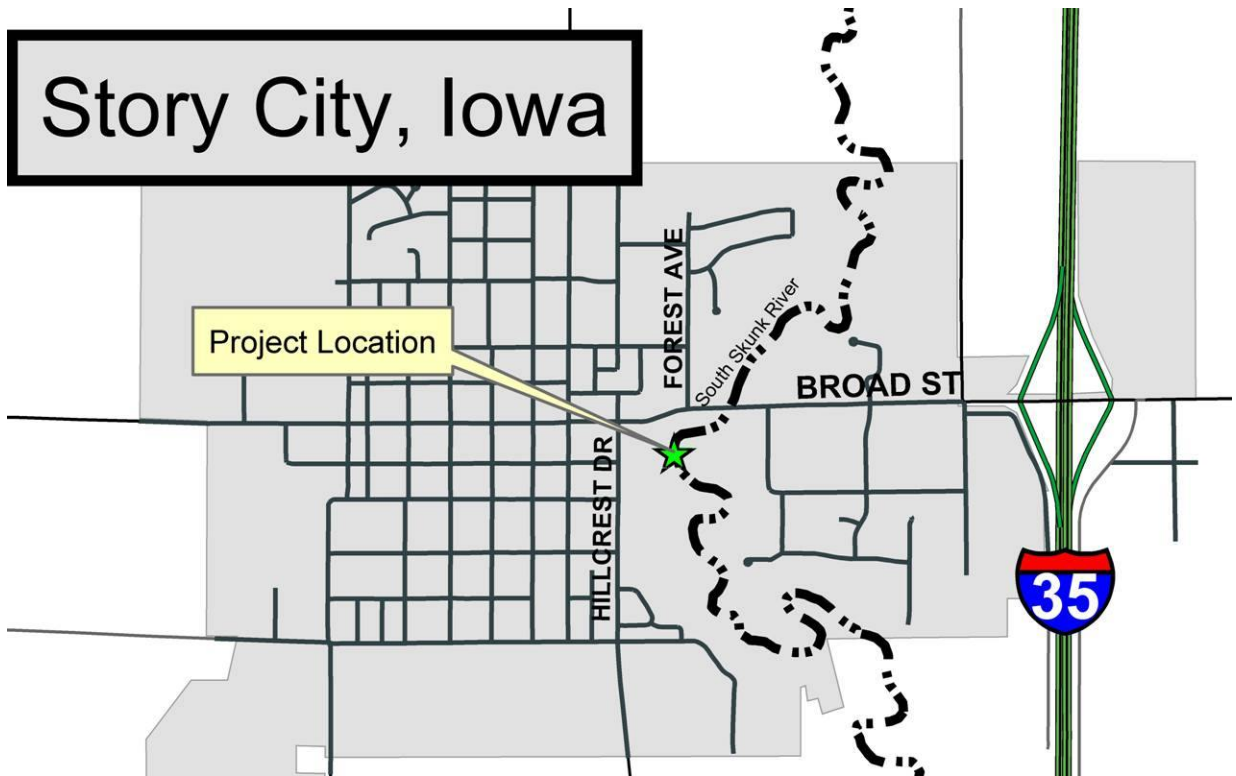
- Canoe Access
- Dam
- Primitive Campsite
- Rivers and Streams
- South Skunk River
- Parks
- City Limits
- Farm Crossing

N

River Access	Anderson Canoe Access	West Peterson Park	Soper's Mill	Sleepy Hollow	River Valley Park	Youth Sports Complex (Proposed)	265th Street	Askew Bridge	
Story City Park Broad Street	3.7	6.9	10.5	12.6	15.3	17.8	20.7	24.1	27.6
Story City E18 Canoe Access		3.2	6.8	8.9	11.6	14.1	17.0	20.4	23.9
Highway E18 Anderson Canoe Access			3.6	5.7	8.4	10.9	13.8	17.2	20.7
150th Street Soper's Mill				2.1	4.8	7.3	10.2	13.6	17.1
170th Street West Peterson Park					2.7	5.2	8.1	11.5	15
180th Street Sleepy Hollow						2.5	5.4	8.8	12.3
Riverside Road River Valley Park							2.9	6.3	9.8
13th Street Ames								3.4	6.9
Highway 30 Youth Sports Complex (Proposed)									
265th Street									3.5
290th Street Askew Bridge									0

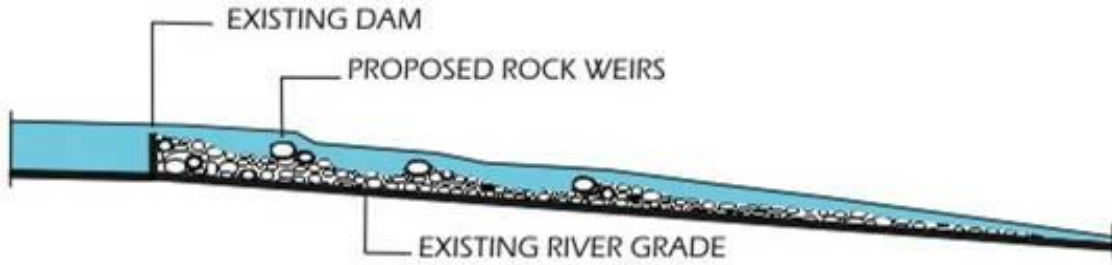


D. MAP OF PROJECT AREA - STORY CITY



E. CROSS-SECTION OF THE PROJECT

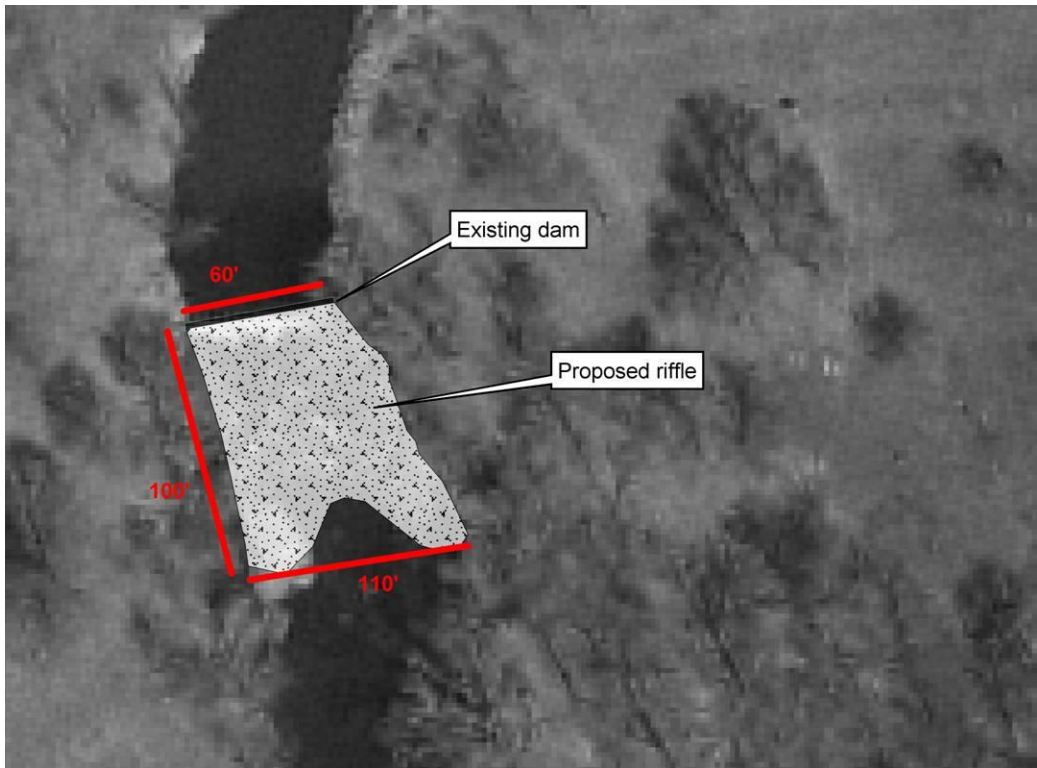
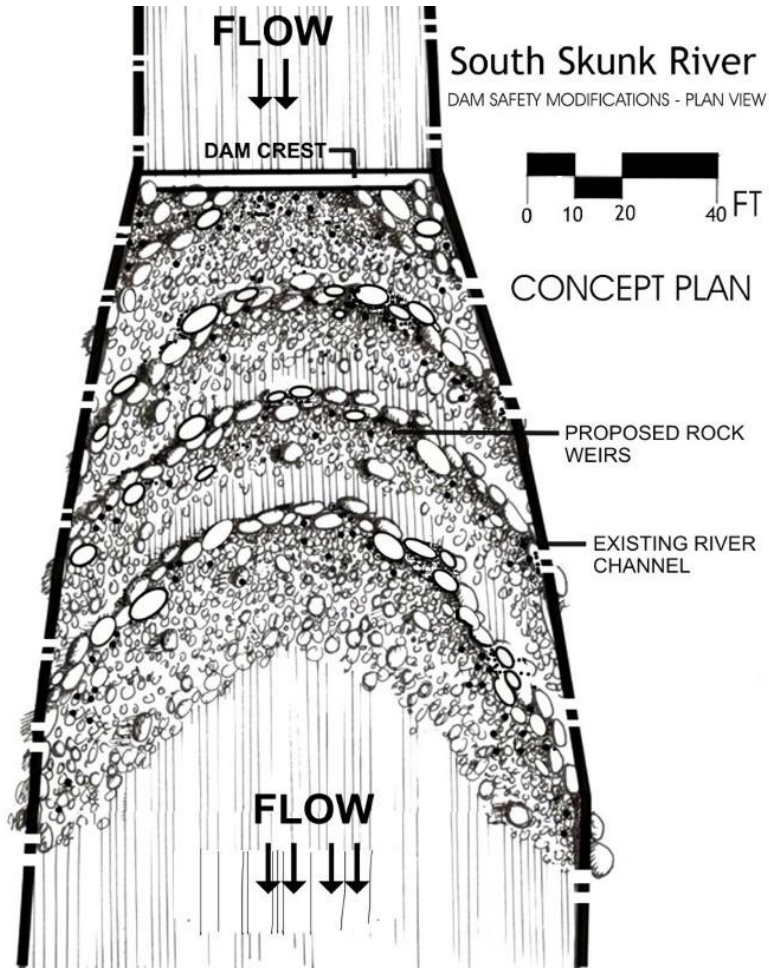
SOUTH SKUNK RIVER DAM SAFETY MODIFICATIONS - SECTION



NO SCALE - concept

F. SKETCH PLAN OF THE PROJECT





G. ITEMIZED BREAKDOWN OF PROJECT COSTS

1) Field stone, 400 tons @ \$65/ton, including purchase, transportation, backhoe arrangement downstream of dam, minimum bank protection/aesthetic rock at edges of sheet pile dam	\$26,000
2) Design/Engineering	\$2,160
Total	\$28,160
Amount in NRT grant for rock	-\$ 1,500
Total grant request	\$26,660

H. TIME SCHEDULE

Summer/fall of 2006 pending approval of the joint application for PROTECTING IOWA WATERS which has been submitted to the Iowa Department of Natural Resources and U.S. Army Corps of Engineers.

I. LETTER OF ENDORSEMENT



City of Story City

504 Broad Street Story City, Iowa 50248 (515) 733-2121

January 27, 2006

Story County Conservation Board
56461 180th Street
Ames, Iowa 50010

Dear Story County Conservation Board:

The City of Story City is supportive in efforts to create and maintain trails and greenways in Story City. In addition, we are supportive of efforts to develop safe public accesses along the South Skunk River that will better serve the public.

Story City supports the Story County Board in its efforts to obtain funding for the development of such projects that not only serve Story City, but Story County and residents of the region.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark A. Jackson".

Mark A. Jackson
City Administrator

J. RESPONSES TO APPLICATION RANKING CRITERIA

1. Will this trail use the statewide water trail signage system? (Yes or no. If not, please explain.)

Yes, with a few exceptions: Dam warning and portage signs pre-exist the state sign standards and some were installed as part of a National Recreational Trails (NRT) Grant.

Water trail (logo) signs were also purchased prior to the DNR's Water Trail Program but have not yet been installed. NRT funds for kiosks, bridge signs, and landing signs have not yet been spent, and our intent is to use the new DNR standards.

2. How will this project enhance water safety on the trail's waterway?

Proposed modifications to the Story City dam will eliminate the dangerous recirculating hydraulic associated with low-head dams and will allow for safe passage over the dam at most stream flows.

Work projects completed in 2005, as part of the NRT Grant, have improved river access at six locations on the South Skunk in Story County. Re-shaping of the stream bank at the US Filter dam has provided for a more visible and safe portage route. All of these improvements will allow canoeists and kayakers easier put-in and take-out locations. Signs and informational kiosks will provide river and trail users with a better sense of location in the case of emergency.

3. Describe your water resource and how your water trail will be attractive to people seeking recreation experiences on it.

The Skunk River has long been promoted by both Story County and the Iowa DNR as appropriate for canoeing and fishing. Much of the river corridor is zoned as greenbelt by Story County or designated as critical resource areas for their aesthetic, environmental, and recreational value. The river, greenbelt trails, and adjacent parklands are used by a diverse and varied group of people. However, prior to this project, several launch/landing areas were undeveloped, steep, and often muddy, limiting safe and frequent use by the general public. Improvements made under the NRT Grant address these barriers and create a more attractive and usable river access for all users.

This project will improve existing river access between Story City and Ames and will establish three new access points to extend the trail an additional 10 miles. Improvements are to include signs, informational kiosks, and the renovation or development of 10 launch/landing areas. This project also provides for handicapped access at two points near Ames. With these improvements, the Skunk River Canoe Trail will meet Iowa Trails Plan 2000 guidelines for water trails. Coupled with the natural resources of the river, these improvements are expected to provide a better experience for canoeists and kayakers.

4. How does your water trail project correspond with conservation efforts, including but not limited to watershed improvement, conservation improvements, trash clean-ups, greenbelt enhancement, scenic view protection, and water quality monitoring?

The Skunk River has been the focus of conservation and clean-up efforts from primarily Ames residents. Paddlers, other local groups, and individuals participate in the Story County Conservation Adopt-A-Park program. Several community groups, including the Skunk River Paddlers, Skunk River Navy, Squaw Creek Watershed Coalition, and the ISU Soil and Water Conservation Club, organize and participate in stream monitoring (IOWATER) and clean-ups on the Skunk and its tributaries. The improved launch/landing areas will facilitate removal of trash from the river during these clean-up events.

All of these supporters share an interest in recreational opportunities and a concern for the river, watershed, and natural areas within. Further enhancements to the Skunk River Water Trail will enrich

recreational opportunities and provide for safe enjoyment of and appreciation for the river and associated park and greenbelt areas. Such activity can increase awareness of and stewardship for these resources.

Litter and illegal dumping are ongoing concerns at several of these public areas. Proposed improvements will lead to increased use, awareness and appreciation of the public area, and together with educational materials included in each kiosk, will help to encourage oversight and stewardship of both the river and access areas.

Modifications to the Story City dam will not only allow safe passage of canoes and kayaks but will eliminate the dam as a barrier to fish movement. The strategic placement of rock weirs will reduce stream bank erosion and enhance habitat for fish and other aquatic species.

5. Detail why funds from this program are needed, and how funds from this grant program might be used to leverage local, National, and any other funds. Projects with local funds secured receive priority.

NRT Grant funding for the dam modifications were based on an estimate of 50 tons of rock required to “taper” the dam to a 20:1 slope. Subsequent measurements and an estimate based on those measurements indicate a need for 400 tons of rock. The total estimate of \$28,160, submitted by a former Iowa DNR engineer with a background in design and construction of rock weirs, includes design/engineering as well as the purchase, transportation, and placement of 400 tons of rock.

Local volunteers have already contributed over 350 hours of labor towards the improvement of river access. Area grocers and restaurants have provided food and beverages at each of six volunteer workdays. The project has support from Story City, Story County Conservation (which administers the NRT Grant), and the City of Ames (which has promised \$5000 towards the construction of a handicapped-accessible access). Manatt’s Inc., a local construction company, re-shaped the bank adjacent to the US Filter dam at no cost. However, the estimated donation amount for the work was \$2,000.

6. How will environmental impacts be taken into account in design and construction of accesses? How will size of the waterway be considered relative to size of the access?

Access improvements began in 2005. Much of the work has been by volunteer labor, resulting in a low-impact approach to construction. Recycled plastic timbers, Geoweb, and rock have been used to create low-impact river accesses while maintaining bank stability and site longevity. The Story County engineer has been involved in site assessment and development to insure proper design.

7. How has local support been sought and demonstrated (i.e., public meetings, media coverage, group membership size, completion of past projects, etc.)? Will you involve volunteers in this project? How do you expect this water trail project will benefit your community, economically, environmentally, and otherwise?

The plan for development and improvement of the Skunk River Water Trail was conceived and coordinated by the Skunk River Paddlers, a group of local paddling enthusiasts which has also spearheaded earlier Skunk River improvement projects.

After organizing improvements to two access points on the Skunk River, the Skunk River Paddlers approached the Story County Conservation Board about its interest in improving the Skunk River Canoe Trail and extending the trail to connect with other public areas that now exist. Following these conversations, organized supporters helped to coordinate a successful grant application to the NRT. Volunteers are heavily involved in the implementation of improvements and are an important part of local in-kind contributions to the overall project

Improvements to the water trail will benefit the community by expanding recreational opportunities and generating greater awareness of the river and the greenbelt area. The local economy should also

benefit through greater river use and associated support activities such as the purchase of food, lodging, fuel, etc. Local businesses supporting the project include JAX Outdoor Gear, Skunk River Cycles, Wild Birds Unlimited, the Grove Café, and Ames Power Sports.

8. *Describe a maintenance plan and list authority(ies) to be responsible for water trail maintenance and operation. Projects with a planned approach to maintenance over the coming decades will receive higher priority.*

All facilities are on existing public lands and maintained as public areas. Story City, Story County Conservation, and the City of Ames have all committed to operate and maintain these facilities for the next 20 years, a condition for NRT funding.

9. *Does your project area have other types of existing trails (i.e., biking or hiking)? Describe planned connections (linkages) between different types of trail systems.*

The Skunk River Water Trail project will link existing parks and greenbelt trails within Story City, Story County, and Ames:

- River access at Story City's South Park is adjacent to a public trail at Jacobson Park and to groomed cross country ski trails at River Bend Public Golf Course.
- An existing greenbelt trail from E18 to the Anderson Canoe Access can be used in a self-supported down-river trip. In winter, it provides cross country skiers and hikers with a lengthy six-mile loop. Shorter loops can be taken at various points downstream.
- River access at Anderson's, Crooked Bend, Bear Creek, Soper's Mill, McFarland Park, and Peterson Park connect to hiking, biking, and cross country ski trails.
- The trails and lakes at Peterson Park provide for the possibility of self-supported, down-river trips, or, with short portages, a water trail loop.
- River access at Sleepy Hollow adjoins hiking, biking, and ski trails at the Ada Hayden Heritage Park in Ames. The City of Ames Capital Improvement Plan calls for the eventual establishment of a Skunk River Recreational Trail from Ada Hayden Park to River Valley Park and beyond to the Hunziker Youth Sports Complex.
- River access at Ames' River Valley Park connects to city bike routes and to recreational trails in McDonald, Gunder, and Nutty Woods.