The modified low-head dam in Yorkville is now a place to peel out, scull, surf and do some Duffek turns.

Illinois Gains Whitewater Adventure

Story By Kathy Andrews
Photos By Adele Hodde

Members of the Chicago Whitewater Association and the Illinois Paddling Council tested the bypass channel to ensure it meets the project's public safety criteria.

When faced with the need to improve public safety at a 1960s-era dam on the Fox River at Yorkville, the State of Illinois agreed to modify the Glen D. Palmer (Yorkville) dam to provide a safer, fish-friendly structure that provides the paddling community with a unique recreational opportunity.

Modifying the dam was completed in three phases. First, the treacherous hydraulic "rollers" downstream of the dam were addressed by the construction of four concrete steps, conceptually designed at the University of Illinois, that extend the old spillway approximately 25 feet into a 22.5-foot-long bed of rip-rap. To facilitate the movement of fish up river, a Denil fish ladder was installed. A 3-foot wide concrete channel with aluminum plates angled upstream, the ladder creates a series of chambers where fish can rest as they move upstream.

The second phase of construction is what has paddlers excited.

Owned by the state and operated and maintained by the City of Yorkville is a one-of-a-kind 1,000-foot-long, dual bypass channel—500 feet above and below the dam—designed to provide both inexperienced and advanced kayakers and canoeists with an interesting watersport venue. As a body of public water, there is no charge for use of the new bypass boating facility on the Fox River.

"Upon entering the bypass channel, the momentum of the river will take paddlers to a novice route, created with the inexperienced paddler or family in mind," explained Loren Wobig, professional engineer with the Department of Natural Resources, Office of Water Resources and manager of the Yorkville Dam project. "Those with the skills to navigate through strategically placed feature boulders in the bypass will be able to maneuver their way to a challenge run, which includes two more challenging whitewater features, one above and one below the dam."

Although some of the pools are fairly

(Photo courtesy Paul Burd.)

(Photo courtesy Loren Wobig.)

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Two of three phases of construction of the modified Glen D. Palmer Dam at Yorkville are complete.

deep, they have been designed with the safety of the novice paddler in mind. Pools along the center part of the course provide a place for capsized paddlers to recover, and not be pushed downstream. This design feature also benefits fish utilizing the channel, allowing them the opportunity to rest on their upstream migration.

Rounded, grouted boulders line the channel bed and the area above the normal pool level where wave action occurs. Many boulder clusters line the channel, positioned to block areas or create a flow feature, especially along the challenge route. Members of the Illinois Paddling Council assisted with the implementation of the channel—and, more importantly, testing its safety. Several members walked the dry channel bed, identifying foot entrapment hazards, crevices between boulders where a foot could get stuck, and sharp or ragged boulder edges that could pose a problem. These same experienced watersports enthusiasts helped conduct bypass testing by running the channel to ensure that it met public safety criteria established for the project.

Erik Sprenne, Advocacy Chairman for the Chicago Whitewater Association, collaborated with the Illinois Paddling Council on the bypass testing and assessment and appreciates that the designers involved the Illinois paddling community while the bypass was under construction.

"The Department of Natural Resources and the Yorkville city fathers are to be commended for remediating a hazardous dam and developing this as a premier paddling opportunity for Illinois," Sprenne said. "We hope that our input has helped make the bypass reach as good, and as safe, as it can be."

Not ready to take a run on the channel? A pedestrian bridge is slated to be placed over the bypass channel in 2011 as part of the third and final phase of the project. This bridge will allow for a birds-eye view of the action or a stroll on the island created by the bypass channel.

Another unique project feature is the application of planted rip-rap.

"We strived to achieve a natural channel appearance," Wobig said. "Using a combination of soil, fertilizer and deep-rooted, native plants not only helps stabilize the rip-rap, but also provides a natural-looking setting whether viewed from the water or land."

According to Tom Lindblade, Illinois Paddling Council, the paddling community is excited about the facility at Yorkville.

"We believe that the Yorkville dam modifications will forever change paddling in Illinois, and that it will make Yorkville the most important paddling destination in the state," Lindblade remarked. "We hope that this will

Modification of the dam's spillway involved construction of four concrete steps to eliminate the treacherous downstream "rollers."

USGS scientists measured flows and velocities during the testing phase of the new bypass channel.

While the bypass channel is designed to be accessible by paddlers of all experience levels, whitewater paddling carries with it inherent dangers and people are reminded to use good judgment in experiencing the Yorkville site.

become the model for similar facilities where other opportunities exist, such as in the cities of Aurora, Montgomery and Rockford."

Sprenne says that construction of this paddling venue has created a sense of excitement in the regional paddling community: "It's a pretty sure bet that Yorkville will be seeing lots of paddlers checking out this new opportunity." The bypass is expected to not only attract paddlers from throughout the Midwest, but holds interest for area paddling instructors as a unique, year-round teaching environment for a number of paddling clubs. Upgrades to a city park adjacent to the channel are under way, and will provide additional parking and observation areas.

Yorkville mayor Valerie Burd feels that the water park is going to be a great addition to the city's riverfront, and will have a tremendous economic impact on the community.

"We already have received inquiries from several recreational canoe and kayak organizations and clubs from surrounding areas looking for places to stay and eat," Burd remarked. "As a city we are going to welcome them with open arms and hope they come back. Yorkville is looking forward to becoming a recreational destination."

Designed and constructed with many unique chutes, pools, eddies, drops and sills not often found in the Midwest, the Glen D. Palmer Dam bypass channel is missing only one thing—you.

More things to come

A wet-prairie seed mixture was applied to the channel slopes following construction, and next growing season visitors should enjoy a diverse and colorful mixture of grasses, sedges, bulrushes and forbs, including New England aster, joe pye weed, bonset, sunflower and blue flag iris.

The City of Yorkville owns property on both sides of the river. Development of the property adjacent to the by-pass channel is far from complete. Plans are under way to revamp and further develop the park property there, including construction of a memorial, permeable paver parking lot, boat launch and fishing/canoe piers, and replacement of the existing playground equipment and shelter.

The 15-acre park on the north side of the river will be maintained as woodland open space, with signs erected along the walking paths interpreting the natural features present.

The Glen D. Palmer Dam bypass channel provides exciting whitewater boating opportunities for both novice and experienced paddlers alike.