

### **Village of Grafton officials would like flood control, not just aquatic species, considered in design**

Engineers continue to refine the design for the fish passage that will allow aquatic species to get past the Bridge Street dam, but Grafton's Public Works Board learned Monday that the plan still needs work.

Andrew Struck, Ozaukee County's director of parks and planning, and Chad Davidson of the engineering firm Bonestroo, provided the board with the latest concept details following a design team meeting earlier in the day.

The latest renderings of the fish passage show a roughly 700-foot channel along the east bank of the Milwaukee River, extending from the downstream face of the dam to an area north of the Washington Street bridge.

"While we've done the engineering, this is not the final design. We still have to do some hydraulic modeling," Struck said.

The current plans call for the channel to be a combination of an enclosed and open passageway.

"It is critical that we get some natural light in the channel," Davidson said.

The channel will have a gradual slope, starting well below the water level at the dam and rising to the surface heading north.

The inside of the channel will include imbedded rocklike features to give fish the sense of swimming along a natural streambed. The obstructions will give fish resting areas before they proceed upstream.

The channel is tentatively designed to handle no more than 10% of the river flow, limiting the water flow to about two feet per second.

"The channel is being designed to accommodate the least athletic of the target species of fish, northern pike, sturgeon and walleye," Davidson said.

Gates will be incorporated into the design to ensure that invasive aquatic species do not use the channel to gain access to the impoundment area upstream on the river.

## Nuances of fish passage debated

Written by Mark Jaeger

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To protect the fish passage, a 3-1/2-foot retaining wall is proposed, so that even in flood stage the volume of water in the channel can be regulated.

That emphasis on protective measures for spawning fish over the desire to preserve riverfront property caught the attention of Village Engineer Dave Murphy.

“Protecting native fish species is great, but we also have a major concern with any measures that would make flooding of the riverwalk even more likely,” Murphy said.

To address those concerns, he asked that an alternate design be considered creating a retaining wall system capable of withstanding a 500-year flood.

Struck asked to meet with the board next month when more refined plans for the fish passage are expected to be ready.

Under the terms of the federal stimulus grant from the National Oceanic and Atmospheric Administration to restore habitat along the river, Struck said the intention is to complete design work on the fishway this year.

An extension could push construction into next year, he said.

On a related topic, the board also reviewed the underwater inspection report on the Bridge Street dam prepared by Collins Engineers.

A dive team inspected the site this spring and determined the dam is in good condition with minor deficiencies.

The greatest problems were noted on the masonry wall along the west downstream shoreline, where heavy deterioration of the mortar joints was seen.

The east side of the dam has eroded bedrock, so the engineering firm recommended replacing the concrete cap in conjunction with the fish passage.

“The study pretty much tells us what we already knew before, that over time this dam is going to need attention,” Murphy said.