RESTORE SALT CREEK
MODIFICATION AND HABITAT RESTORATION

MASTER PLAN FOR SALT CREEK AT FULLERSBURG WOODS

FACT SHEET

HISTORY OF THE GRAUE MILL DAM AT FULLERSBURG WOODS

The Graue Mill dam is located on Salt Creek adjacent to Graue Mill in the Fullersburg Woods Forest Preserve in the Village of Oak Brook. The dam is owned by the Forest Preserve District of DuPage County (FPDDC).

In the 1830s a brushwood dam was constructed on the site. This dam was destroyed a few years later by flooding (ASME 1981)[1]. A log dam replaced the brushwood dam in 1844, which in turn was replaced by a plank and crib dam in 1879. The plank and crib dam washed away in 1916.

In 1933, the site was purchased by the FPDDC and in 1934 the Civilian Conservation Corps built the much shorter concrete dam that exists at the site today. This dam has a crest length of 132 ft. (40.3 m) and stands 6.2 ft. (1.9 m) high. The impoundment created by the dam spans 16 acres and is approximately 3,900 linear feet in length. The current dam is not a recreation of an earlier period dam nor is correctly sized to power the mill wheel reliably.

The adjacent mill was originally constructed in 1852 and was heavily refurbished by the Civilian Conservation Corps in 1934 (ASME 1981). Since 1934, additional work has occurred at the Mill including converting the gristmill operations to electricity.

[1] The American Society of Mechanical Engineers. May 2, 1981. Old Graue Mill: An Illinois Historic Mechanical Engineering Landmark.

DID YOU KNOW...?

The Graue Mill gristmill still operates today, but it does not rely on the waterwheel for power. Instead, the internal gears and millstones are turned by an electric motor.

WHY REMOVE THE DAM?

The Illinois Environmental Protection Agency (IEPA) monitors Clean Water Act compliance via surveys of water chemistry and aquatic life (fish and insects). If the surveys identify any water quality problems, the stream is listed as impaired and enforcement actions are issued via permits for the wastewater treatment plants (WWTPs) that discharge to stream.

Salt Creek is listed as impaired for biology (lacking fish and insects) and in 2004 tighter restrictions were suggested for area WWTPs as a remedy. If implemented, these would cost utility and taxpayers an estimated $213 Million[2] (B&W 2018 in 2020 dollars) in capital costs alone.

Evidence suggests that, despite these costs, the tighter restrictions on the WWTPs will not move the Creek significantly towards compliance with the Clean Water Act. Local sampling and studies identified three (3) primary reasons why the river segment is failing to meet biological requirements:

BLOCKAGE OF FISH PASSAGE

There is a large decrease in fish biodiversity as we move upstream of the dam. This decrease is due to the physical barrier of the dam. Sixteen (16) native river fish species including blackside darter, emerald shiner, johnny darter, northern pike and rock bass are absent upstream of the dam. The modification of the dam will allow these fish to establish themselves in the watershed up to the Busse Woods Dam in Schaumburg.

LOW DISSOLVED OXYGEN (DO)

DO is the amount of oxygen that is present in the water. Just like humans, all of Salt Creek's living creatures – from fish to insects – need oxygen to survive. The lowest DO levels in Salt Creek are consistently associated with the Graue Mill dam.

POOR IN-STREAM AND RIPARIAN HABITAT CONDITIONS

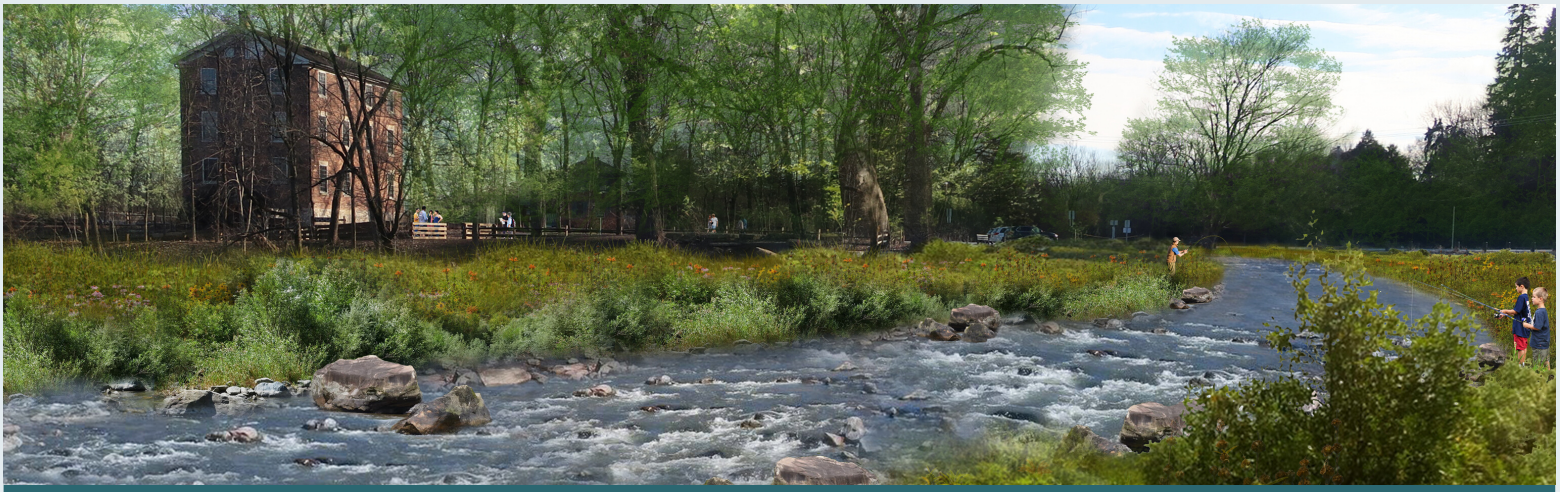
River fish and macroinvertebrates (bugs) need flowing water, gravel bottoms, and low levels of muddy sediment. The habitat behind the dam consists of stagnant water and sediment. The poor habitat explains the drop in insect species upstream of the dam.

Each of these issues is directly associated with the presence of the dam. State and Federal Agencies have agreed to allow local partners to implement an alternative local plan that will be more efficient with public money. These local partners, working together as the DuPage River Salt Creek Workgroup (DRSCW), have developed an alternative plan for the entire watershed, which includes dam removals and promises not only public savings, but greater environmental benefits as well.

[2] Baxter & Woodman. December 5, 2018. Technical Memorandum - Planning Level Cost Estimate for Additional BOD & Ammonia Removal at WRRFs Tributary to Salt Creek.

SALT CREEK IS AN IMPAIRED STREAM ACCORDING TO THE IEPA.

To increase the diversity of fish and insects in the stream without removing the dam, upgrades to WWTPs would cost an estimated $213 million. However, this great expense to taxpayers would still not be enough to meet Clean Water Act requirements.



The Master Plan for Salt Creek at Fullersburg Woods honors history while improving water quality, enhancing recreational opportunities, and saving taxpayer dollars.

MASTER PLAN FOR SALT CREEK AT FULLERSBURG WOODS

The Master Plan for Salt Creek at Fullersburg Woods goes beyond dam removal, it is a full stream corridor restoration project. The Master Plan for Salt Creek at Fullersburg Woods will improve water quality, recreation and education on Salt Creek while saving taxpayer money.

WATER QUALITY IMPROVEMENTS

The Master Plan relies on the benefits of healthy, naturally free-flowing rivers to improve water quality in Salt Creek beyond what could be achieved through additional public spending on wastewater treatment. The project will replace the Graue Mill dam with a rock riffle structure that will create safe passage for paddlers and allow fish to travel for 17 miles upstream of the dam for the first time in nearly 90 years. The removal of the dam will not necessitate any alteration to the historic millhouse, which has used an electric motor for its milling operations for several years.

Additionally, over a mile of river upstream of the dam will be restored by creating wetlands, planting native vegetation, enhancing in-stream habitat and more. These enhancements will be designed to improve the aquatic habitat of Salt Creek and promote healthy populations of fish, macroinvertebrates, birds, and reptiles.

RECREATION AND EDUCATION OPPORTUNITIES

The project benefits go beyond ecology. The Master Plan for Salt Creek at Fullersburg Woods includes education and recreational elements to complement the water quality improvements. Proposed amenities include canoe/kayak launches, fishing stations that provide access to the creek and educational signs. Content for the educational signs will focus on the benefits of dam removal and stream restoration as well as honoring the history of the site and its milling operations.

SAVE TAXPAYERS MONEY

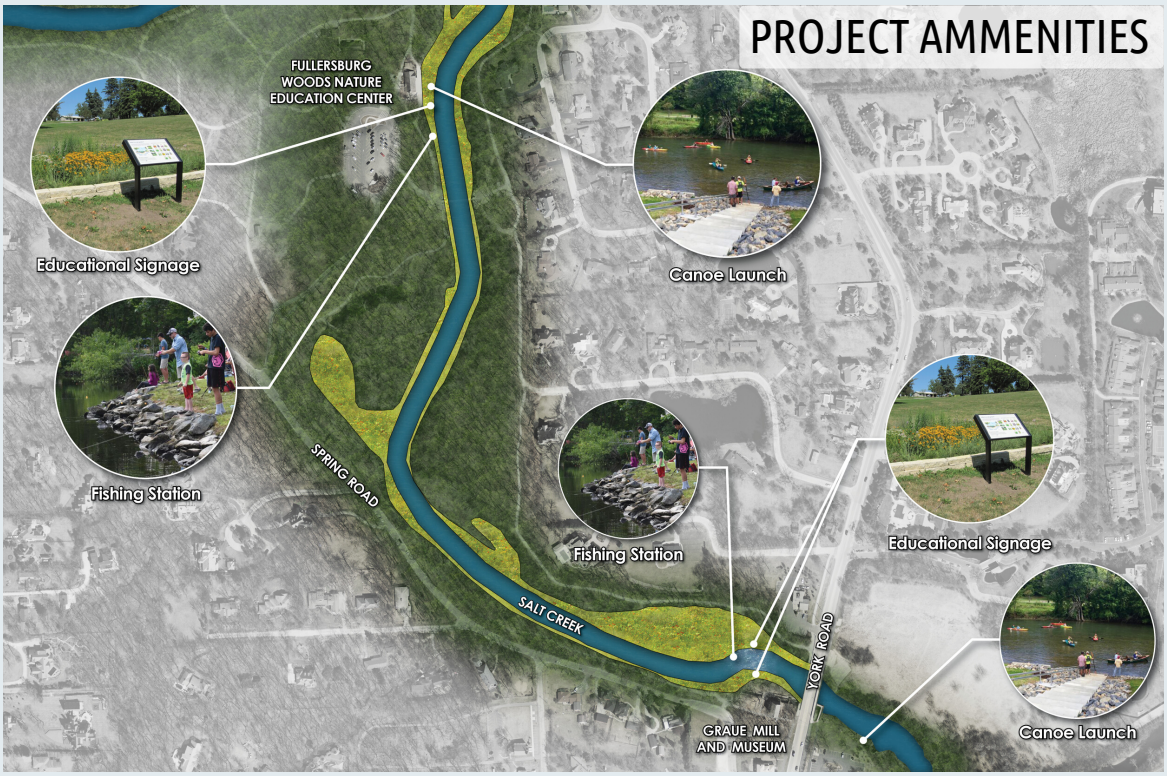
The Master Plan will allow upstream communities to forgo hugely expensive upgrades at their wastewater treatment plants. Analysis shows that improvements to water quality due to dam removal are more effective and cheaper than plant upgrades. Plant upgrades have been estimated at $213 million in capital costs and $8 million a year in increased running costs. Such upgrades will marginally increase water quality upgrades but cannot restore the river's fish biodiversity.

PROJECT HIGHLIGHTS

- Creating a 30% increase in fish diversity in the 17 miles north of the dam
- Improved water quality in the area upstream of the dam
- Avoidance of large unproductive costs for public entities
- Maintained aesthetic and auditory experiences of falling and flowing water at the water feature at the site
- Increased recreation and educational opportunities provided by safe access to Salt Creek, canoe launches and educational signs
- Maintaining water flow in the millrace

RESTORE SALT CREEK

This project includes much more than the area around Graue Mill. The restoration of Salt Creek will revitalize over one mile upstream of Graue Mill by stabilizing the stream bank, diversifying habitat for aquatic life, and planting native vegetation along the stream.



PUBLIC INPUT ON THE MASTER PLAN

The DRSCW is seeking public input on the plan to restore Salt Creek. Visit **RestoreSaltCreek.org** to learn more about the project and the Master Plan for Salt Creek at Fullersburg Woods. There you'll find recorded presentations and registration for a live webinar on Tuesday, July 7, 2020 at 7pm or Thursday, July 9, 2020 at 11am. A survey will be available to submit comments on the project following the July 7th webinar.