



DuPage River Salt Creek Workgroup

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October 2, 2020

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RE: Resolution 2020-OPP-GMD-R-1900 "Resolution of Opposition to Graue Mill Dam Removal" adopted by the Village of Oak Brook on September 8th, 2020.

East Branch DuPage River
Committee Chairperson

Larry Cox
Downers Grove Sanitary District

Dear President Lalmalani and Trustees Barr, Cuevas, Manzo, Saiyed, Tiesenga and Yusuf:

West Branch DuPage River
Committee Chairperson

Erik Neidy
Forest Preserve District of
DuPage County

I am providing this letter on behalf of the DRSCW's Board of Directors in response to the Village of Oak Brook's above-referenced resolution in opposition to the DRSCW proposal to remove the dam adjacent to Graue Mill in the Fullersburg Woods Forest Preserve on Salt Creek. The Village took the unusual step of mailing this resolution not only to the Forest Preserve District of DuPage County as the dam's owner, but also to all DRSCW members. This necessitates our written reply since the resolution contains a number of factual errors and, more unfortunately, accusations that some DRSCW wastewater treatment members are not meeting their IEPA permit obligations. In correcting this information, the DRSCW is seeking to keep the public discussion based on facts. We are continuing to maintain the website at www.restoresaltcreek.org to make the science and public record behind the development of the Master Plan transparent and publicly available.

Member At Large

Mary Beth Falsay
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Member at Large

Amy Underwood
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Deanna Doohaluk

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Watershed Administration

Nancy Cinatl

Environmental Scientist

Alex Handel

First "Whereas" (page 1 of 3)

The paragraph states the site is "host to the Graue Mill dam and reservoir pond created by that dam, which in turn is listed in the National Historic Register of the United States".

The national historic register does not actually include either the dam or the reservoir pond in the site description, the supporting photographs, or site map. The mill building alone is listed as the historical site.¹



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The paragraph notes that Salt Creek was a “source of historic power” to the mill. The current dam was constructed in 1934, and it is several feet lower than the prior dams that had actually powered the mill² (those were destroyed by floods in 1839 and 1916). The current dam is unable to power the mill. Rather, the gears are currently operated by an electric motor. It should also be noted that there was no dam at the site for 33 of the 97 years between the dates of the construction of the first dam (1837) and the new construction (1934).

Second “Whereas” (page 1 of 3)

This paragraph states that the DRSCW includes “eleven (11) municipalities operating sewage treatment plants (the “Sewage Plants”) that release sewage into Salt Creek”. Sewage is “refuse liquids or waste matter usually carried off by sewers”³ or the “The used household water and water-carried solids that flow in sewers to a wastewater treatment plant. The preferred term is WASTEWATER”⁴ (emphasis from source material). Sewage is, by definition, untreated sanitary wastewater, prior to treatment at a plant. Under normal operations no DRSCW member treatment plant is releasing sewage to Salt Creek, or any other waterbody. Such an action would violate Federal and State laws. Treatment plants capture and clean up the organic and waste material from human civilization (sewage or more properly wastewater) and then release it after treatment in a form benign to human health and the environment known as wastewater effluent.

Each treatment plant operates under a strict National Pollutant Discharge Elimination System (NPDES) permit from the IEPA that dictates both the quantity and quality of treated effluent it may release. Pollutant concentration levels for treated effluent (plant outflow) in permits are set in accordance with IL Effluent Standards (Ill Admin Code 35 Part 304) and IL Water Quality Standards (Ill Code 35 Part 302). The quality of the wastewater effluent is monitored and reported to the IEPA. If a plant violates its permit, it may be subject to both fines and remedial action. All plants are operating in compliance with their permits.

DRSCW does not charge “discharge fees” to its members. Rather, it is funded by voluntary membership dues, as well as a voluntary special assessment for



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wastewater treatment members that have opted to work on alternative, more effective means of meeting IEPA requirements. Also, The Conservation Foundation does not itself administer DRSCW funds. Rather, the collection and expenditure of funds are directed by the DRSCW's Board of Directors as well as the general membership. The Conservation Foundation does supply technical and administrative staff under contract to the DRSCW.

Third "Whereas" (page 1 of 3)

This paragraph accuses upstream point-source dischargers of releasing "dirty water". The word "dirty" has been used here to give the connotation that the effluent from these private and public facilities is undesirable and/or dangerous without justification.

The reference at the end of the paragraph to pollution increasing conductivity is puzzling. The principle pollutant increasing conductivity of Salt Creek is dissolved salt (NaCl or other compounds with one or more Cl atoms attached) from winter de-icing operations⁵. Neither water conductivity nor winter de-icing operations have been referenced in the justification to remove the dam. Further, water being able to conduct an electrical current is normal.

Fourth "Whereas" (page 1 of 3)

In reference to runoff from golf courses being the source of poor water quality, Salt Creek is indeed the recipient of polluted runoff from multiple surfaces, including but not limited to roads, parking lots, yards and golf courses. Contrary to the statement that this is not well understood, the DRSCW has spent considerable time and effort mapping, inventorying and analyzing pollution in all its forms (physical as well as chemical) from both point and non-point sources on Salt Creek⁶. This includes current and legacy insecticides, herbicides and fungicides. While all of these inputs do impact the general water quality and aquatic life of Salt Creek, they do not explain the largest drop in biodiversity as measured by fish and insects, in the dam's impoundment.



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No pattern between golf courses and pollutants has been noted that would suggest their pollution footprint is more egregious than other non-natural surfaces in the watershed.

The Village of Oak Brook holds a General NPDES II Permit for Discharges from Small Municipal Storm Sewer Systems (ILR400407). This permit, also referred to as a MS4 permit, covers activities such as landscape irrigation waste, flows from riparian habitats and wetlands, and residual street runoff (ILR40 Part 1 B.2). If Oak Brook is concerned about the water quality impacts of golf courses within its corporate boundaries, Oak Brook may consider addressing that via their MS4 permit activities. DRSCW is ready to assist in any way that we can.

Fifth “Whereas” (Page 2 of 3)

DRSCW agrees that the dam does not release pollutants into Salt Creek. Rather, the dam does damage the Creek and its aquatic life by:

- Accumulating sediment behind the dam, which decreases water quality and degrades in-stream habitat. This leads to a fall of in aquatic insect scores, a key metric of Clean Water Act Compliance.
- Accumulating pollutants such as leaf litter and contaminated sediment, increases ambient river temperature, decreases in-stream aeration, and increases algae blooms. All of these factors lower the in-stream dissolved oxygen (DO).
- Cutting off fish migration and repopulation.

Sixth “Whereas” (Page 2 of 3)

This paragraph references the release of harmful pollutants from treatment plants and the high costs to utility payers to reduce them. All DRSCW members hold NPDES permit(s) for wastewater and/or stormwater discharges. All water discharged into Salt Creek from stormwater sources and treatment plant sources contain a degree of CBOD, TSS and ammonia-n present in various concentrations. Treatment plants report the concentrations of these pollutants in their effluent monthly to the IEPA. Comprehensive in-stream monitoring by the DRSCW also



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compiles and analyzes the concentrations within Salt Creek every 3-4 years. These concentrations have routinely complied with permit limits. Pollutants are judged harmful based on their concentrations not their mere presence.

Removal of the dam will improve in-stream DO far greater and more cost-effectively than would the expensive upgrades at treatment plants while also delivering the benefit of fish migration and aquatic insect scores through an improved habitat. Neither of these necessary improvements would be realized by mere additional wastewater treatment.

The resolution unfortunately suggests that the dam removal proposal is solely motivated by a desire to save large amounts of public money and that it will not “clean” Salt Creek. This is stated in several sections as if being prudent with public money is a negative, and the DRSCW disagrees with that assertion.

Seventh “Whereas” (Page 2 of 3)

The reference to “152 miles of Salt Creek” in this paragraph appears to be a confounding of watershed area (square miles) and waterway length (linear miles). The argument being expressed is that the dam impoundment is only a small percentage of the total stream length stream at that point. Additionally the plots of fish, insects⁷ and DO⁸ on Salt Creek should persuade anyone of the ecological merits of removal of this dam. Removal of the dam will actually revive fish populations over the entire length of Salt Creek. This result has already been observed following the removal of the Churchill Woods dam on the East Branch of the DuPage River as well as numerous other dams on the Des Plaines River.

The proposed dam removal and associated 1.25 miles of stream restoration in the existing impoundment area is not part of a Water Quality Trading Process. The 2004 TMDL (page 6-17)⁹ references a water quality trading process as one of several methods possible to enable dam removal to be implemented to resolve a DO TMDL. However, the DRSCW has not developed, nor has the IEPA and USEPA approved, a water quality trading process that includes this project.

The proposed dam removal is included in a NPDES permit special condition for each of DRSCW’s wastewater treatment members as part of the DRSCW Implementation Plan dated April 16, 2015¹⁰.



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Lastly, the IEPA classifies dissolved oxygen (DO) a pollutant for regulatory purposes. The general use water quality standard for DO can be found at Ill. Admin. Code tit. 35 § 302.206.

Eighth “Whereas” (Page 2 of 3)

This paragraph includes the accusation alluded to in the Second “Whereas”, that “raw human waste” is being discharged to the stream. This would be a breach of treatment plants’ NPDES permits and, thus, an accusation that they are breaking State law. Again, they are not doing so under normal operations.

There is also a statement that fish breathe a list of given pollutants. Gilled organisms of course do not breathe ammonia, TSS, CBOD etc., rather they only extract DO from the water. It is DO that is affected by these chemical parameters. However, the resolution again makes the incorrect assertion that the distribution of fish and other aquatic life is primarily due to chemical pollutants in Salt Creek.

Salt Creek hosts 16 more native fish species below the dam than above the dam. Yet water quality is similar in the river above and above the dam (with exception of the impoundment area). Likewise, insect scores are much higher both below and above the impoundment area. Stream biodiversity is clearly more affected by the dam and its impoundment than by either in-stream water quality or the discharges of effluent from treatment plants.

In 2016, the Forest Preserve District of DuPage County, with the funding and technical assistance provided by the DRSCW, removed a dam upstream on Salt Creek at the Preserve at Oak Meadows in Addison and Wood Dale. Despite being in an area dominated by treatment plants (the majority of the projects’ sample sites were less than a mile downstream of a wastewater treatment plant), insect biodiversity scores nearly doubled after the project. This was accomplished while holding wastewater effluent treatment constant, and a control site outside the projects’ influence showed no change during the same three years.



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Consideration of Aesthetics and the Historic Mill

The main arguments for wanting to keep the dam is that the impoundment and dam create an ambiance at the site that enhances the mill and allows a pleasing semblance of the water-powered heritage. We submit that a free-flowing and accessible waterway that passes energetically through a riffle and within beautified banks will be very attractive to visitors and an amenity to the region. As stated previously, the mill wheel does not turn due to the fact that the current dam is lower than prior dams, as well as on-going sedimentation within the impoundment. The DRSCW has publicly and agreeably committed to include provisions in the project to allow the mill wheel turn despite these existing limitations, and will also provide additional educational signage along a new walking path. To help with investigating options, we recently funded a thorough cleaning of the mill's raceway. Turning of the mill wheel has also been expressed as an important project aspect by the dam's owner, the Forest Preserve District of DuPage County.

There is much work for DRSCW members as we continue to improve our local waterways in the coming years. We all benefit from our collaborative approach, and hope to have the Village of Oak Brook's continued membership and support.

Respectfully,

David P. Gorman, President
DuPage River Salt Creek Workgroup



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References

- ¹ National Register of Historic Places, Graue Mill, Oak Brook, DuPage County, Illinois, National Register #75002077
- ² The American Society of Mechanical Engineers. May 2, 1981. Old Graue Mill: An Illinois Historic Mechanical Engineering Landmark
- ³ Merriam Webster Dictionary
- ⁴ Operations of Wastewater Treatment Plants: A Field Study Training Program: Volume 2, Seventh Edition
- ⁵ Illinois, E. P. A. October 2004. Total maximum daily loads for Salt Creek, Illinois (final report). CH2M Hill. Inc., St. Louis, MO.
- ⁶ Midwest Biodiversity Institute (MBI). 2010. Priority Rankings based on Estimated Restorability for Stream Segments in the DuPage-Salt Creek Watersheds. Technical Report MBI/2010-11-6 Columbus, OH 43221-0561. Prepared for the DuPage River Salt Creek Workgroup
- ⁷ Midwest Biodiversity Institute (MBI). 2018. Biological and Water Quality Study of Salt Creek and Tributaries 2013-16. DuPage and Cook Counties, Illinois. Technical Report MBI/2018-3-1. Columbus, OH 43221-0561. 116 pp.
- ⁸ HDR Engineering, Inc., Huff and Huff Inc., Inter-fluve, Inc., September 2009. Dupage River Salt Creek Workgroup - *Stream Dissolved Oxygen Improvement Feasibility Study for Salt Creek*
- ⁹ Illinois, E. P. A. October 2004. Total maximum daily loads for Salt Creek, Illinois (final report). CH2M Hill. Inc., St. Louis, MO.
- ¹⁰ DuPage River Salt Creek Workgroup (DRSCW) Implementation Plan, April 16th 2015