

# **Dredging History (1988 – 2018) at the Green Bay Yachting Club**

**As recollected by John Kennedy  
March, 2019**

In November of 2018 I received an email from Paul Spillers, the Fox River Remediation Project Manager with Tetra Tech, Inc., which read in part:

The Fox River Project has no work currently planned for the Green Bay Yachting Club (GBYC) next spring. Post-dredge confirmation cores were collected in May 2018 and based on the PCB analytical results, the area received the following comment (in italics) from the Agencies/Oversight Team (A/OT): *A/OT Comment 2018-05-21: NFA (No Further Action) is acceptable for this area at this time, however, final confirmation sampling may be required once the upstream to downstream remedial actions are complete.*

I had been waiting for such an email for a very long time. Have to admit that there were times I thought it would never come. But at long last the GBYC harbor was dredged as part of the Fox River Sediment Remediation Project. Over 23,000 cubic yards of sediment were removed from the GBYC harbor, using the suction dredge techniques that were used on the rest of the river. The sediments were “sucked up” using a cutter head dredge and then piped to the treatment facility upriver to a state of the art treatment facility. Dried sediments were shipped to a licensed landfill, and the treated water was returned to the Fox River; all thanks to the Fox River Group that agreed to clean up the PCB (Polychlorinated biphenyls) contamination that had first been identified as long ago as the early 1970’s.

Given this landmark achievement, I thought it might be useful for GBYC members to hear more details about the project’s history. As any of GBYC’s past Secretary’s (myself included!) can tell you, our historical records are sometimes a bit less complete than we would like. But fortunately I’ve been around long enough and have kept my own records for “all things PCBs” that I can piece together a reasonable history.

I have found no records that would indicate that we ever dredged our harbor before 1988. Best I can tell, we first applied for a dredging permit back in October of 1988, as part of our request to install the dike which extended and enclosed our harbor. This is the concrete rubble dike upon which sit the historic Grassy Island Range Lights that are currently undergoing a \$3.6 Million restoration project. That permit allowed us to dredge the area just inside the new dike; a relatively small area. However, notes that I have found in the file indicate that no significant dredging actually took place.

Fast forward to late 1999: Low water levels stimulated the GBYC Board to investigate options for harbor dredging. A request was made in January of 2000 to the Army Corps of Engineers (ACOE) and the Wisconsin Department of Natural Resources (WDNR) to dredge about 12,000 cubic yards of sediment from the harbor to provide a more reasonable depth for recreational boating. The Club quickly learned that sediment testing would be necessary in order for a permit to be issued. Sediment cores were collected in late January. Unfortunately those sediment cores contained measurable amounts of polychlorinated biphenyls (PCBs). The presence of PCBs was not completely unexpected, as the Fox River from the outlet of Lake Winnebago all the way to the mouth of the river and parts of Green Bay had been the subject of an investigation into PCB contamination.

PCBs in the GBYC harbor sediment cores ranged from 1.9 – 21.9 ppm (parts per million). The problem was that the Brown County Bayport Disposal Site could not accept sediments with more than 5 ppm. Plus, sending the dredged sediments to the Brown County site would be more expensive than sending them to a “normal” sanitary landfill. Ultimately the GBYC Board decided to limit the project to about 6,000 cubic yards of dredging, which

would all contain less than 5 ppm of PCBs and could be disposed of at the Bayport site. This work was done in May of 2000, at a total cost of about \$99,000.

This work gave the Club a little extra depth, but only in a little over half of the harbor. Fortunately the lake levels rebounded somewhat, and the boats with deep drafts dug furrows in the bottom “only occasionally”. But the Board continued to discuss the need for future dredging, particularly in light of the proposed remediation work for the Lower Fox River which began to take shape. But the “shape” was an ever shifting process.

Thus began a decade long period of “watch and wait” (with several reminders to the agencies that “we’re still here!”) hoping that the GBYC harbor might be dredged as part of the full scale cleanup, whatever that turned out to be. In addition, several Club Commodores sent letters in the early 2000’s to the WDNR and the Oneida Tribe for consideration under the Natural Resources Damage Assessment (NRDA) effort. This is a parallel effort in addition to the sediment cleanup for the river, and is meant to replace some of the services from natural resources that were “lost” to the residents of northeast Wisconsin due to the PCBs. Our request centered on the costs that we incurred to dispose of the PCB contaminated sediments, which were higher than we would have seen had the sediment been “clean”. Unfortunately, responses from both agencies indicated that our request did not qualify for reimbursement under the NRDA process. However, they encouraged us to stay active in the Fox River Sediment Remediation planning process, as they thought it reasonable that our harbor would be included.

The need to take action to remove PCBs from the river had been a key feature of the Lower Fox River and Green Bay Remedial Action Plan, which had been issued in 1988. After several years of negotiations between the paper mill group and the agencies, remediation work began on Little Lake Butte des Morts in 2004 and was completed in 2009. Work on the balance of the Lower Fox River began in spring of 2009. Initial estimates suggested that the project would take 10 years to complete.

But in 2008 low water once again caused problems, and the GBYC Board gave consideration to a limited dredging project. Unfortunately, the response from the various agencies all pointed to what would be a limited project, again due to the PCB concentrations that were expected. In addition, more extensive (and expensive) testing would be required, and the disposal costs for the sediment would be even higher than we experienced in 2000. Fortunately, by this time we began to get feedback which suggested that at some point our harbor would be dredged as part of the Fox River project, though it would likely be several years down the road.

In 2009 when the Fox River project got underway, we again expressed our interest in being included. (It is notable here that we received much needed support and encouragement from our landlord – NEW Water.) The response was again positive. But given our location (at the mouth of the river) we were told not to expect to see activity in our area until near the end of the project. More waiting!!

Our first official meeting with the Fox River Project Remediation Team occurred in 2011. Things were finally starting to happen! The first sampling of our harbor occurred in summer of 2012. (Literally thousands of sediment cores were collected and analyzed at all points along the river throughout this project. The data were used in a sophisticated computer model which helps generate a 3-D plan for dredging.)

In October of 2014 we received word from Gary Kincaid (the WDNR Project Manager) that the GBYC harbor was scheduled to (probably) be dredged in October of 2016! Halleluia!! The Board started discussions about how to orchestrate the project. (Our intent was to work with the contractors to minimize difficulties at their end, while also trying to minimize disruptions of our summer harbor usage.)

The only problem remaining was that we did not know exactly how much of the harbor would be dredged, and to what depth. The Remediation Team doesn’t finalize their computer model until the winter prior to each year’s dredging season. It was possible that the dredging project would not remove as much mud as we all wanted. So, the Board began to investigate whether it would be feasible (and hopefully inexpensive!) to conduct our own

“follow up” dredging after the full scale project was completed. The bad news turned out to be that it would not be as simple, or as cheap, as logic might have inferred. Our thought was that when the remediation dredging was completed, the remaining sediment should be clean enough to allow for inexpensive disposal options, right? Well, not so much, as it turned out.

The good news was that, as time for the remediation dredging at GBYC approached, we learned that a considerable amount of mud would need to be removed. In March, 2015 we learned that approximately 21,000 cubic yards of sediment would need to be removed. Also, the measured concentrations of PCBs were relatively consistent (on the order of 5 ppm), which meant that the entire harbor would be dredged. The estimate was that approximately four feet of mud would be dredged from nearly the entire harbor! With this information now in hand, the Board decided that it was no longer necessary to consider “post remediation” dredging.

The actual dredging schedule slipped a bit to fall of 2017. In August, 2017 the estimate of sediment to be removed increased to 29,000 cubic yards (though in the final computer run this was reduced back to 21,000 cubic yards). The Remediation Team met with us to finalize logistics. Their plan included use of the “big” dredge, which was anticipated to allow us to leave the south and north docks in place, as it could “reach” under them all the way to shore. This meant we had to schedule two Dock Days, but it was happy work! Approximately 17,000 cubic yards of sediment from our harbor were dredged, conveyed to the treatment facility, and processed.

During the following winter additional depth profiles and core samples were collected. At a planning meeting with all parties in March, 2018 we learned that another 7,000 cubic yards would need to be dredged. Also, we would need to move the docks first to one side, then the other, so that the dredge could adequately work close to shore. Work got started, and everything was going great! But then we got the “storm of the century” on April 13, 2018! The storm added several days on to the anticipated time to completion, but it also pushed the docks onto the south shore due to the high winds. But in one final act of Providence, on our scheduled final Dock Day a short blow of north wind raised the water level allowing us to float the docks easily off the shore without damage.

And so it was done. The spring, 2018 work removed another 6,433 cubic yards, bringing the total to 23,433 cubic yards (give or take!). This compares to our 2000 project which removed about 6,000 cubic yards.

Lots of folks have asked about the total cost for the project. In the big picture (i.e. the entire Fox River project) the number most shared is “about \$1 billion”. As for the GBYC harbor portion, no exact numbers have been calculated. But I think it reasonable to estimate that, if we attempted to hire professional contractors to do the same job, the cost would be over \$1 million.

Which leads me to acknowledgements: The Fox River Cleanup Group (see link below) has definitely taken a proactive role in managing one of the largest PCB cleanup projects in the country, if not the world. As of this writing, more than 5.4 million cubic yards of sediment have been removed from the Fox River. Their corporate stewardship is gratefully acknowledged.

Contractors: Tetra Tech provided full project management. I wish especially to thank Richard Feeney and Paul Spillers, who were very considerate of our wishes and helped keep the GBYC “at the table”. I would also like to note my appreciation to Dustin Bauman, who was our main liaison with J.F.Brennan.

Governmental Agencies: WDNR and EPA provided administrative oversight during the entire project. I wish to offer my personal gratitude to Gary Kincaid (WDNR) and Jim Hahnenberg (EPA) who I had worked with during our time on various technical committees related to the Lower Fox River and Green Bay Remedial Action Plan since way back in 1987.

Others: Our landlord, NEW Water, played an important role throughout the project. They have been very supportive of the effort, and repeatedly expressed their concerns that the GBYC harbor should be included in any

full scale remediation project. Finally, we should all express our thanks to numerous individuals and Board members of the GBYC, who worked steadily over many years to keep the project alive.

May other individuals, companies and agencies played important roles in the project. My comments above are not meant to exclude them; but rather are only meant to highlight those entities or individuals with whom I personally spent considerable time involved with the details and planning efforts.

Finally, it is notable that the Wisconsin DNR received the 2019 NEW Watershed Champion Award from NEW Water in March for their efforts on the project – read more about that here: <http://newwater.us/our-watershed/new-watershed-champion/>

Links to more information:

[www.foxrivercleanup.com](http://www.foxrivercleanup.com) (The Fox River Cleanup Group)

[www.epa.gov/great-lakes-AOCs/about-lower-green-bayfox-river-AOC](http://www.epa.gov/great-lakes-AOCs/about-lower-green-bayfox-river-AOC)

<https://dnr.wi.gov/topic/Greatlakes/greenbay.html>

[www.fws.gov/midwest/es/ec/NRDA/FoxRiverNRDA/index.html](http://www.fws.gov/midwest/es/ec/NRDA/FoxRiverNRDA/index.html)