From: Bohl, James
To: Elmer, Linda
Subject: Fwd: Comments Re: City of Milwaukee, Zoning, Neighborhoods & Development Committee October 25, 2016 Agenda item # 160339
Date: Saturday, October 22, 2016 1:18:34 PM

On Oct 22, 2016, at 1:11 PM, Will Wawrzyn <wwawrzyn@att.net> wrote:

Dear Alderman Bohl and Alderman Kovac,

My name is Will Wawrzyn. I am a resident of Milwaukee County and reside at 4444 South Packard Avenue, Cudahy, WI. I am writing you to state my support for the City of Milwaukee, Zoning, Neighborhoods & Development Committee October 25, 2016 Agenda item # 160339, *A substitute ordinance relating to the change in zoning, from Parks to Institutional, of lands located south of West Hampton Avenue and east of North Port Washington Road (6th Aldermanic District).* I am supportive of all City of Milwaukee, Milwaukee Metropolitan Sewerage District and Milwaukee County Executive Chris Able actions that would ultimately lead to the removal of the Milwaukee River Estabrook Dam.

While I am not currently a resident of Milwaukee, I resided in the Riverwest neighborhood for 30-years and feel strongly that removal of the Estabrook Dam is in the best socio-economic and environmental interests of all the communities and residents within the lower Milwaukee River, the Milwaukee harbor Estuary and Lake Michigan watersheds. I have been professionally and personally involved with Milwaukee County's controversial Estabrook Dam for over a decade.

Attached is an email I previously sent to all members of the Milwaukee County Board of Supervisors on September 15, 2016 prior to their Finance and Audit Committee meeting. Despite the weight of evidence that supports removal of the Estabrook Dam for a wide range of social, economic and environmental reasons, the Committee did not approve the County's Park staff resolution recommending removal of the County owned dam in lieu of dam repairs.

If appropriate, please accept this email and attachment as part of the Committee's public testimony. If I must be present to enter this into the Committee's record, please let me know in advance of the meeting and I will try to rearrange my schedule.

Respectfully,

Will Wawrzyn
4444 South Packard Avenue
Cudahy, WI 53110
wwawrzyn@att.net
mobile: (414) 719-9280

Dear Milwaukee County Board Members and State Senator Darling,

I am writing you once again to provide a very brief update from my previous September 13, 2016 e-mail. According to at least two recent Milwaukee Journal Sentinel articles by Don Behm (September 11 and 13, 2016) Milwaukee County estimated the annual operation and maintenance (O&M) cost for the Estabrook Dam at $207,000. This is an annual O&M cost increase of $47,000 compared to the $160,000 estimate previously reported in three County documents, including the:

<!--[if !supportLists]-->• <!--[endif]-->October 2015 Estabrook Dam Environmental Impact Statement prepared for Milwaukee County by AECOM,

<!--[if !supportLists]-->• <!--[endif]-->September 1, 2016 Milwaukee County Comptrollers Supplemental Memorandum, and

<!--[if !supportLists]-->• <!--[endif]-->July 1, 2016 Revised Report - Update on the Estabrook Dam Rehabilitation – Action from John Dargle, Jr., CPRP, Director, Department of Parks, Recreation and Culture to Theodore Lipscomb, Sr., Chairman, County Board of Supervisors.

There is annual allotment of $51,000 from the Weigel Hearst Trust which is devoted to the Dam's O&M. The current balance in the Trust per the Comptroller's report through this fiscal year is $203,000. The County has yet to remove the debris from both section of the dam's spillway, the ice breakers and about 300 cubic yards of debris still present in the floodplain from 2013 per the WDNR dam safety requirement. Previous O&M costs just for debris removal were up to $40,000 and never included the "fixed crest" spillway which accumulates most of the debris and has very difficult access through a private easement. **If the County Board decides to repair the Dam, the Trust account for the Dam's O&M could be running a deficit as early as FY 2017 or definitely by 2018. After that, the O&M costs will have to be appropriated through the County's annual budget process and must compete with more sustainable and beneficial Park's projects.**

Following the above, the Total Present Worth of the project over 20-years for the Dam repair is now estimated at $7.5 million or $1.3 million greater then reported in 2015. The capital cost with no O&M for removing the Dam is still $1.7 million, or almost 4.5 times less than removing the Dam. And for what and whose benefit?

Milwaukee County Office of Emergency Management 2016 O&M and 2016 Contractor BID Capital Cost

Interest Rate	Time Period (years)	Present Worth Factor	BID Capital Cost	Annual O&M Cost	Present Worth	Total Present Worth	Increase Since 2015
0.02	20	16.351	$ 4,105,244	$ 207,000	$ 3,384,657	$ 7,489,901	$ 1,261,741

Present Worth = Factor x Annual O&M 2015
Total Present Worth = Capital Cost + Present Worth O&M Costs

I have revised my previous e-mail below. All revisions are highlighted in yellow.

Thank you,

Will Wawrzyn

From: Will Wawrzyn [mailto:wwawrzyn@att.net]
Sent: Tuesday, September 13, 2016 2:02 PM
To: 'david.l.sartori@milwaukeecountywi.gov'; 'theodore.lipscomb@milwaukeecountywi.gov'; 'deanna.alexander@milwaukeecountywi.gov'; 'eddie.cullen@milwaukeecountywi.gov'; 'marina.dimitrijevic@milwaukeecountywi.gov'; 'jason.haas@milwaukeecountywi.gov'; 'willie.johnson@milwaukeecountywi.gov'; 'michael.mayo@milwaukeecountywi.gov'; 'supreme.mooreomokunde@milwaukeecountywi.gov'; 'marcelia.nicholson@milwaukeecountywi.gov'; 'james.schmitt@milwaukeecountywi.gov'; 'dan.sebring@milwaukeecountywi.gov'; 'anthony.staskunas@milwaukeecountywi.gov'; 'sequanna.taylor@milwaukeecountywi.gov'; 'steve.taylor@milwaukeecountywi.gov'; 'sheldon.wasserman@milwaukeecountywi.gov'; 'john.weishan@milwaukeecountywi.gov'; 'peggy.west@milwaukeecountywi.gov'; 'Sen.Darling@legis.wisconsin.gov'
Subject: County Board Action Regarding the Estabrook Dam

Dear Milwaukee County Board Members and State Senator Darling,

My name is William Wawrzyn. My wife and I reside in Milwaukee County's 8th District at 4444 S. Packard Ave., Cudahy. I am writing you to request your support for reversing Milwaukee County's current policy to repair the County owned Estabrook Park Dam. It is my professional opinion that aside the from the impacts of stormwater runoff, there is no greater threat to the future of the lower Milwaukee River's environment and recreational uses than a decision to repair the dam and reflow the impoundment.

I am a former water resources and fisheries biologist with the Wisconsin Department of Natural Resources (WDNR) having retired in July 2015 after 38 years with the agency. Briefly, my experience and expertise as it relates to the Estabrook Dam included working with over 15 dam owners and stakeholders to assess dam management alternatives in the Milwaukee River Basin, the pre- and post-monitoring to assess the outcome of those dam projects. I have assisted in the design, construction and maintenance of the fish passage facility at the Mequon-Thiensville Dam on the Milwaukee River and assisted in the design of several MMSD projects along the Menomonee River. I was the local WDNR project manager for the $4.7 million North Avenue Dam removal completed by the City of Milwaukee in 1997, and was also involved with the initial assessment that identified the extent of sediment accumulation and PCB contamination in the Milwaukee River's Estabrook Dam impoundment. More recently I volunteered my time and assisted the County's Park staff in making successful grant applications for habitat restoration projects, and Milwaukee County's consultant in the planning and design of the proposed Estabrook Dam fish passage facility assuming the worst case scenario that the County's policy would be to repair the dam. Retirement has allowed me to volunteer and continue to work with public and private stakeholders on a variety of local environmental restoration projects that are beneficial and sustainable; but without the former political constraints. To that end, I am active in arguing for the removal of the Estabrook Dam.

There are many issues and arguments surrounding the Estabrook Dam, and no shortage of sound scientific and engineering based-data by which Milwaukee County policy makers could have used to make a weight-of-evidence decision to repair or remove the Dam. This simple act could have avoided the political impasses that followed, where the County's policy was changed from repair, to removal, and then back to repair with fish passage through several budget cycles in 2014-2016. As an example, County Board Chairman Lipscomb could have had an up or down vote for funding repair or remove the Dam based on the findings contained in the comprehensive 2015 Environmental Impact Statement completed by the County's own consultant (AECOM), but chose not to. In 2015, funds for dam repair were tied to a vote to allocate funding for all County capital construction projects. In 2016, County Board rules were suspended to tie a vote on dam repair to a vote on funding for the County's public safety budget.

I appreciate your busy schedule so I will try to be brief in addressing what I believe are the dam repair proponents most frequent remaining arguments for repairing the dam and their opposition to dam removal. I believe their arguments are not supported by scientific and engineering facts, and in some instances they are based on intentional misinformation. The arguments are centered on the following dam management issues:

- <!--[if !supportLists]-->● <!--[endif]-->Costs
- <!--[if !supportLists]-->● <!--[endif]-->Environmental and Recreational Values
- <!--[if !supportLists]-->● <!--[endif]-->History and Purpose
- <!--[if !supportLists]-->● <!--[endif]-->Flooding and Drainage Impacts
- <!--[if !supportLists]-->● <!--[endif]-->Property Value and Liability

Costs

The higher than expected July 2016 contractor bids have pushed the capital costs for repair and construction of a fish passage facility to $4.1 million, or $600,000 more than the County had funds for. Just as significant, the 20-yr total present worth cost is now $7.5 million or $1.3 million more than the original 2015 estimate, something the next generation will be on the hook for. Even with these repairs, in 20 years the dam will be 100 years old and the gated section of the dam's spillway will likely require major work again if not a complete demolition and replacement dwarfing the cost of current day repairs.

Based on a September 11 and 13, 2016 article report by Don Behm of the Milwaukee Journal Sentinel, the Milwaukee County Department of Emergency Government Management the estimated annual cost to operate and maintain (O&M) the dam is $207,000. These costs are too low since the WDNR's Operational Order will require annual removal of debris from the entire width of the spillways to prevent damage to the dam and potential flood and drainage risks upstream. To date, the County has allocated only $51,000 from the television tower rental (Weigel Hearst Trust) directly for the dam O&M and away from the Parks general operating budget. O&M costs do not include other tangible and intangible costs associated with sedimentation and future dredging needs to abate poor water and sediment quality, navigation and aesthetics, degraded fish and wildlife habitat, and potential increased flood liability for the County to name a few. The County has yet to remove the debris from the spillways and floodplain this year, and once the $203,000 balance on the Weigel Hearst Trust is depleted the annual O&M budget shortfall of $156,000 means the County must appropriate the remaining costs through its annual budget process and the dam will be pitted against the needs of more sustainable Park projects that benefit all County residents and taxpayers. As an example, I have worked on many of the County's neighborhood Park ponds and all of them are impacted by poor water and sediment quality, eroded banks, nuisance amounts of non-native aquatic vegetation and poor recreational fish stocks. Neighborhood residents would all benefit from redirecting the Estabrook Dam's repair funds to managing these ponds.

The County's record for adequately funding, staffing, operating and maintaining the dam is not good as evidenced by its delinquent response to previous WDNR's orders to repair, operate and maintain, and remove debris from the entire dam spillway and floodplain.

According to the 2008 independent study by the Public Policy Forum, the deferred maintenance on Milwaukee County Park facilities was estimated at over $250 million. Conservatively, present day costs are over $350 million. This means the County cannot pay to repair, maintain, and operate its current facilities, and appropriating millions at the Estabrook Dam and impoundment without considering other cost effective and sustainable river and dam management alternatives means other important Park's projects will not be funded.

The capital cost for removing the Estabrook Dam is $1.7 million with no O&M costs or almost 4.5 times less than the dam repair and fishway alternative. The dam removal alternative total present worth cost is four times less than the dam repair and fishway alternative. Compared to the dam repair alternative, the dam removal alternative does not require an engineered and flow managed fishway. Dam removal is 100% effective at passing fish; enhances habitat for fish and wildlife including wetlands, creates a sustainable recreational fishery, and eliminates the county's liability for flooding properties and infrastructure. Furthermore, there are habitat restoration grants available that would pay the lion's share of the costs for dam removal and other river management practices. Collectively these efforts could approximate many of the river's original natural features and water-based recreational uses that existed prior to the extensive river channelization and dam construction projects of the 1930's, and at a fraction of the costs of repairing and operating the current dam.

Proponents to repair the dam argue that the costs for dam removal is low and don't include the public and private landowner costs for "remediating miles of shoreline". When asked about specific impacts and locations that would require remediation and how those impacts are caused by removing the dam, no site-specific details are provided.

Environmental and Recreational Values

The costs for the repair, operation and maintenance of the Estabrook the dam could be considered beneficial and cost effective and worthy of local and state taxpayer's investment if the quality of the Estabrook impoundment's water-based uses (e.g., navigation, water quality and aesthetics, fishing, etc.) were sustainable. Based on my professional background and experiences I am very certain that the near- and long-term prognosis for the Estabrook impoundment is poor. If the dam is repaired and the impoundment is flooded, it will be years, not decades, when nuisance conditions will begin developing in the Estabrook Impoundment and County residents will question their local and state policy maker's decision to fund this expensive project.

Lacking data, dam repair proponents argue that the Estabrook Impoundment effectiveness for settling polluted soil and sediment particles is "**zero**" and as

such the biological, chemical and physical characteristics of the impoundment will not become degraded; and desirable water-based uses such as swimming, wading, fishing, aesthetics and navigation will be unaffected. The facts are that the Estabrook Impoundment is a very effective depository for polluted soil and sediment.

Over the course of the recently completed Estabrook Impoundment sediment remediation project, hundreds of samples were obtained from the Estabrook Impoundment to document the thickness, volume and mass of accumulated contaminated sediment. While the depths of the accumulated sediment were variable, large amounts of sediment had accumulated in all areas of the impoundment up to 10-feet. The WDNR estimated that 176,200 cubic yards, 7,630 pounds of hazardous PCB and 16,718 pounds of carcinogenic PAH were removed at a cost of $49 million. **The volume of removed sediment is equivalent to over 12,580 dump trucks.**

For many decades, the County would open the gates of the dam and drain the 117-acre impoundment around mid-September and close the gates in late-May. This practice resulted in the scouring of polluted sediment that impacted local and downstream water quality, fish and aquatic life habitats. As part of their final Operational Order, the WDNR will no longer allow the County to operate the dam and water levels because of this and other environmental impacts. I'm confident that if sediment surveys were extended throughout the impoundment so to provide estimates of all accumulated sediment in the Estabrook Impoundment, and if the County had not been opening the dam gates and eroding a portion of the annually deposited sediment downstream, the amount of accumulated sediment since construction of the dam in 1940 would be well in excess of the 176,200 cubic yards of contaminated sediment removed from the impoundment. Absent the ability to flush the impoundment for extended periods of time, the Estabrook Impoundment will accumulate sediment at a faster rate than previously experienced for decades.

The quality and quantity of sediment and stormwater discharged to the Estabrook Impoundment has a direct and indirect affect on fish and aquatic life habitat, aesthetics, fishing and other forms of recreation. Nutrient and organically rich sediment and polluted stormwater can produce nuisance amounts of plant material that impact dissolved oxygen levels through plant respiration. The eventual death and decomposition of this plant material will contribute to the buildup of putrid "muck" throughout the impoundment. This sediment will be enriched with nutrients and organic matter that will be the fuel for future nuisance plant growth. Besides being unsightly, eutrophic and turbid water quality conditions benefit the proliferation of tolerant non-native aquatic plants at the expense of native aquatic plants that provide habitat for all life stages of fish and wildlife. The accumulation of impounded sediment enriched by substances such as heavy metals and PAHs from urban runoff can have acute and chronic impacts on fish and aquatic life at all life stages and the impacts can extend over generations. As the impoundment fills with fine sediment, habitat suitable for preferred native fish such as walleye and smallmouth bass and other aquatic life will be poor. Inversely, fish and aquatic life tolerant of degraded habitat such as common carp will do very well in the Estabrook Impoundment. No other fish species, native or non-native, is so well adapted to degraded habitat and modifying habitat to their benefit and at the expense of native species. The accumulation of upland and "mucky" sediment will impact aesthetic, eliminate wading, and eventually reduce recreational boating opportunities.

The North Avenue Dam removed by the City of Milwaukee in 1997 provides a reasonable analog for predicting the environmental and recreational potential of Estabrook Impoundment should the dam be repaired or removed. The North Avenue Dam and impoundment was located just a few miles downstream of the Estabrook Dam. Both impoundments have similar morphology and responded to the same sources, quantity and quality of polluted stormwater, sediment, and flow regimes. Prior to removing the dam, the North Avenue impoundment's physical habitat, sediment and water quality was very degraded. The impoundment was filled with over 700,000 cubic yards of silty polluted sediment. Sediments thickness ranged from 1-ft to 12-ft. Sediment was described as "effervescent" from methane gas released from the sediment, which contributed to oxygen depletion. Shallow areas were overgrown with nuisance amounts of submerged exotic aquatic plants and filamentous algae. Only eight species of fish were present, six of which are classified as tolerant to environmental degradation. Greater than 90% of the fish and biomass were non-native common carp and tolerant native white sucker. Dissolved oxygen levels were less than 0.5 part per million, well below the state water quality standard of 5 parts per million for protection of fish and aquatic life, and fish kills were a common occurrence. Recreational boating was almost absent and wading and swimming was unheard of.

Following removal of the North Avenue Dam, improvements in the riverine habitat increased native fish species diversity several fold from six native species in 1990 to 35 native species in 2012. Smallmouth bass became and remain the most abundant game species. Additional native game fish included walleye, northern pike, channel catfish, largemouth bass and rock bass. Concurrent with the improved diversity and abundance of native fishes, there has been a dramatic decrease in common carp. Removal of the North Avenue Dam has created a popular recreational fishery that includes native fishes, as well as Lake Michigan fall and spring runs rainbow trout, and fall runs of brown trout, coho and Chinook salmon. The 3-mile long river reach is especially popular with neighborhood fishers that do not have the means to travel outstate for a quality experience and meal. Nuisance amounts of non-native plants are gone and dissolved oxygen levels are meeting state water quality standards. Wading, canoeing and kayaking are common recreational uses. Approximately 30-acres of uplands and wetlands have been restored along with many miles of formal hiking and biking trails, and an amenity for the Urban Ecology Center and Milwaukee Rotary Centennial Arboretum.

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History and Purpose

Lacking evidence, proponents for repair of the dam argue that keeping the Estabrook Dam restores the unique hydrologic feature – "a drainage lake that appears to have existed in the area of Lincoln Park since before the end of the Wisconsin glaciation." Proponents also argue that the dam doesn't create a new or "fake" water level but restores the historic water level.

The area inundated by the Estabrook Dam was never a "natural lake" nor was it a "unique" water feature. The area was a low-gradient, narrow and meandering river dominated by deeper runs and pools bounded by wetlands. The maximum depth behind the rock outcrop was 6-feet with water depths decreasing further upstream. Average river widths ranged between 100-feet and 155-feet. There are numerous examples of similar river reaches in Milwaukee, Ozaukee and Washington Counties.

Deepening and widening of the 1.4-miles of the river and construction of the dam did not replace a "natural lake" environment to its original water level. Instead it destroyed the historic natural river and wetland features and buried them in accumulated sediment. Compared to the historic natural river channel, the Estabrook Impoundment is:

- <!--[if !supportLists]--> <!--[endif]--> **Longer by 1.1-mile**
- <!--[if !supportLists]--> <!--[endif]--> **Deeper by 0.4-feet to 8-feet**
- <!--[if !supportLists]--> <!--[endif]--> **Wider by 155-feet to 350-feet, and**
- <!--[if !supportLists]--> <!--[endif]--> **Larger by 63-acres, which is equal to 48 football fields.**

The historic river's deeper water did not extend beyond the "big bend" located between present day Silver Spring Dr. and Bender Rd. where most of the 163 riparian residential properties currently exist. The historic river's depth and width would have been wadable and adequate for row boats or small horse powered outboards, and personal watercraft such as canoe and kayak. The river features would not have been safe nor compatible with some of today's riparian landowners demands for an impoundment to accommodate deep drafting speed boats and high-speed personal watercraft (PWC) (e.g., "jet ski's), and activities such as water skiing. If the County chose to adopt a safe boating ordinance that is consistent with the state's boating safety laws, power boat speeds would be limited to slow no wake within 100-feet of a shoreline, and within 200-feet of a shoreline for powered personal watercraft (PWC). These rules also have the benefit of reducing waves breaking on the shoreline that cause erosion, most of it along publically owned shoreline. By my estimates, power boats would be limited to wake speeds to 1-mile or 25% of the impoundment and 34-acres or 30% of the 117-acre impoundment between the dam and the center channel's upstream confluence of the east and west "oxbows"; and PWC would be limited to just 0.2-miles and 9-acres.

There are no adequate public boat launch and trailer parking facilities along the impoundment that would allow all County residents an opportunity to participate in power boat and powered personal watercraft (e.g., jet skis) recreation. Those opportunities are generally available to river property owners that

typically launch and retrieve their deep drafting power boats once during the boating season. Unbeknownst to most boaters, there is a public launch located at the end of Apple Blossom Lane in the City of Glendale. However, the launch is in fair condition at best and is not maintained. Vehicle and trailer parking is very limited along the residential street. Given these limited conditions, encouraging more *public* power boat access and operation would only cause congestion and compromise safety. This bolsters the public perception that the cost to repair the dam is to create an impoundment for a small number of private landowners with power boats.

The purpose for constructing the Estabrook Dam was to provide for water-based recreational uses. Removal of the dam and resulting impoundment would not eliminate those uses with the exception of being unable to operate deep drafting power boats and high speed personal watercraft by a few local users. The quality of water-based recreational uses would be enhanced by removal of the dam in particular water quality, aesthetics, restoration of wetlands, fish and wildlife habitats, recreational and consumptive fishing, wading, and navigation by canoe and kayak.

Flooding and Drainage Impacts

Lacking any credible engineering studies, dam repair proponents argue that the Estabrook Dam was constructed and remains critical to reducing flood and drainage damages from the Milwaukee River. To the contrary, the Estabrook Dam was not constructed to prevent over bank and local nuisance flooding. Early dam planning documents dating back to the later 1930's recognized that only the removal of the rock outcrop and channelization of the Milwaukee River through Lincoln Park would offer some flood relief. Even after channelization of the river, flooding associated with high river flows and ice jams would continue to be a problem, in particular along the flood prone Sunny Point neighborhood located in the City of Glendale between Silver Spring Dr. and Bender Road where 288 of the 292 residential structures are located and are identified as being in the 100-year floodplain.

It is important to note that adopted floodplain studies for the Milwaukee River and Estabrook Impoundment assumes that all of the dam's flood gates are opened in a timely manner. Studies dating back to the 1980's, and most recently by the Southeastern Wisconsin Regional Planning Commission (SEWRPC) concluded the dam contributes to drainage and flood damages especially if all the dam's flood gates cannot be opened in a timely manner due to ice and debris accumulation or power outages, or operator inaccessibility to the dam. Under those conditions, structural flood damages would exceed the current 288 structures in the 100-year floodplain. **This is a liability that the County as owner and operator of the dam must recognize and accept.** These conditions have occurred under less than the 100-year flood event. **The County Board chose not to heed the recommendation of their own Director of the Office of Emergency Management, the City of Glendale's Certified Floodplain Manager, and an independent risk management and flood insurance provider that given the flood risks and damages and potential liability to the County, the dam should be removed.**

According to the hydrologic and hydraulic study completed by SEWRPC and summarized in the 2015 AECOM Environmental Impact Statement, removal of the Estabrook Dam is the only dam management alternative that reduces potential flood damages from the Milwaukee River or from submerged storm sewers. Compared to the dam removal alternative, the dam repair alternative would:

<!--[if !supportLists]-->● <!--[endif]-->With all of the dam's flood gates open in a timely manner, the 100-year flood event elevations increase between 0.5 and 1.5-feet between the dam and Bender Road.
<!--[if !supportLists]-->● <!--[endif]-->If the County is unable to raise all of the dam's flood gates in a timely manner during the 100-year flood event, the flood water elevations would be as much as an additional 1.5 feet higher than the 100-year flood elevation near the dam with the gates open, and continue to exceed the 100-year flood elevation at Bender Road. This would result in flood damages to more than the current 292 residences in the current 100-year floodplain.
<!--[if !supportLists]-->● <!--[endif]-->If the County is unable to raise all of the flood gates during more frequent and less extreme flood events beginning at the 15-year flood event, the flood levels and resulting damages would be similar to those experienced during the 100-year flood with all the flood gates raised.
<!--[if !supportLists]-->● <!--[endif]-->The dam would be responsible for more nuisance flooding of local streets and yards due to storm sewer backups in the City of Milwaukee and City of Glendale for all modeled flood events. While nuisance drainage related events have occurred in the past, the full extent of potential nuisance street and yard flooding in neighborhoods has not been quantified.

Dam repair proponents argue that the number of homes in the 100-year floodplain does not change under the dam removal alternative. That cannot be stated with any certainty at this time. The boundary of the 100-year floodplain is based on a map with 2-ft elevation contours and it is not possible to extrapolate below 1-ft. Therefore, a detailed elevation survey would be required to ascertain whether a structure would be added or removed from the floodplain under each dam management alternative and for all floods up to the 100-year event. That said, with the dam gates closed, the 100-year floodplain increases up to 10-inches with most of the properties affected by increasing flood elevations by about 5-inches. This is not an insignificant amount when considering how low and flat the topography is in the Sunny Point neighborhood. Any flooding from the river or by surcharging storm would also enter local sanitary sewers and floor drains that contribute to residential sanitary sewer backups and overflows to the Milwaukee River.

Until such time more detailed flood elevation surveys are completed that identifies the lowest flood water entry point for each structure, the argument should not be limited to the number of residences taken out of or that remains in the 100-year regulatory floodplain for the dam repair or dam removal alternatives. An analysis would need to be completed that:

<!--[if !supportLists]-->● <!--[endif]-->Identifies which additional properties might experience flooding for the 100-year and more frequent flood events if the dam's gates could not be raised in a timely manner, and
<!--[if !supportLists]-->● <!--[endif]-->Identifies which properties would experience a reduction in potential flooding as a result of less extreme and more frequent flood events should the dam be removed.

Alternatively, under the dam removal option, the 100-year floodplain decreases by up to 6-inches with most properties decreasing by 3-inches. If you own a flood prone residence, every inch decrease in flooding is valued. There are similar reductions in flood elevations for the more frequent but less extreme flood events than the 100-year flood. Removal of the dam is the only alternative that eliminates all potential flood and drainage liability to the County.

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Property Value and Liability

Proponents for repairing the dam argue that removing the dam would result in the County being liable for millions of dollars in lost private property values. This is a straw dog argument.

There is no evidence to suggest that this would be the case. To the contrary, there are Wisconsin-based peer-reviewed studies and an independent appraisal completed for the former Milwaukee River North Avenue Dam removal project that looked at the effects of small dam removal on water front property values that concluded property values generally stay the same or slightly increase following dam removal. There is no evidence of any property devaluations that have occurred as a result of the 14 dams removed in the Milwaukee River Basin.

The property's current value is assessed at having water access by way of owning water frontage. There is no distinction between a free-flowing river or impoundment. A more definitive accounting of what the difference in assessed land value and property tax revenue should be is to ask the City of Glendale's assessor, which is Accurate Appraisal, LLC located in Menasha, Wisconsin.

Riparian's along the Estabrook Impoundment would still have the same amount of water frontage with or without the dam and they would still own access to the river and have title to the thread of the river channel with or without the dam. The types of navigation use of the river may change but the river would remain navigable in fact. As an example, a property owner may no longer have year around water depths sufficient to navigate the river with a larger, deep

drafting powered boat but would still be able to navigate with smaller craft such as by canoe and kayak.

Milwaukee County's own Corporate Counsel has stated that "legal theories and facts that would provide strong defenses for the County in the face of litigation and claims" over lost property value claims and specifically cited a recent ruling in Gaborsky v. Zerwekh, 2013 WI App 73, ¶ 4, 348 Wis. 2d 263, 831 N.W.2d 824.

All property owners are concerned about the future return and salability of their properties. There many tangible and intangible factors that could affect a buyers interest in a riverfront property including the quality of the water, sediment and its fishery, shoreline stability, navigation preferences, and their personal aesthetic preferences of a free-flowing river versus an impoundment. Not to long ago, prospective river front landowners would not always ask about a river property's location relative to its floodplain. Potential liability and added cost issues would not arise until mortgage providers informed them of flood insurance requirements. Given all the recent media reports of the flood events and severe damage to people's health and properties, those questions are now front and center by potential riverfront home buyers. The additional cost for flood insurance over a 15-year or 30-year mortgage is significant, flood insurance premiums will be increasing, and the cost of that insurance is not recovered at the time a property is sold.

The following link is to a more detailed and technical document that provides the technical support for my previous comments. It includes additional links to references and images cited above. I would ask that you at least spend brief time browsing that document. The link can be found at:

https://static1.squarespace.com/static/55157271e4b0179c6ec8b662/t/57d81b862994ca4304447698/1473780621864/Revised+09122016+EstabrookDam+wo+summary.pdf

I hope you and the other supervisors will make a final decision on the Estabrook Dam based on all credible proof and final weight of evidence. If so, I believe you will rightly reverse the current policy to repair the Estabrook Dam and instead vote to remove the dam.

If you are uncertain of the accuracy and intent of the dam repair and dam removal arguments then the Board should postpone a decision on the dam and first appoint an ad hoc committee of scientists and other independent professionals to review the existing information and provide recommendations. The lower Milwaukee River, including the Estabrook Dam and impoundment, is "data rich" with scientific and engineering information. Scientists and engineers from local universities and colleges (e.g., UW Milwaukee School of Freshwater Science), and water resource management agencies with expertise in surface water resource studies and management (e.g., US Geological Survey and Southeastern Wisconsin Regional Planning Commission) should be asked to participate on the committee. Additional alternatives can be explored that mitigate the severe environmental impacts of the 1.4 miles of deepening and widening of the river channel and the construction and operation of the Estabrook Dam that are sustainable, approach the historic functions and uses of the Milwaukee River, and do not increase potential flood and drainage damages. As in the past, the findings and recommendations should be presented to the public for review and input. Proponents and opponents to repairing the dam should accept the recommendations as expertly informed and follow them without any more political maneuvering. What could be more responsible than that?

Thank you for your time and consideration. If I can answer any questions, please feel free to contact me.

Respectfully,

Will Wawrzyn