OONA ENVIRONMENTAL NEWSLETTER, February, 2025

Fellow OONA members: This is our third environmentally focused newsletter. It is being emailed to members and sponsors, and also published on the members-only OONA Facebook site. In this edition, we take on three topics:

1. Current and short-term-future lake levels
2. STAMP. The hits just keep on coming…
3. The complicated story of forever chemicals

Comments, suggestions, questions, corrections, and constructive criticism are always welcome. Thanks for reading. *The OONA Environment and Preservation Committee*

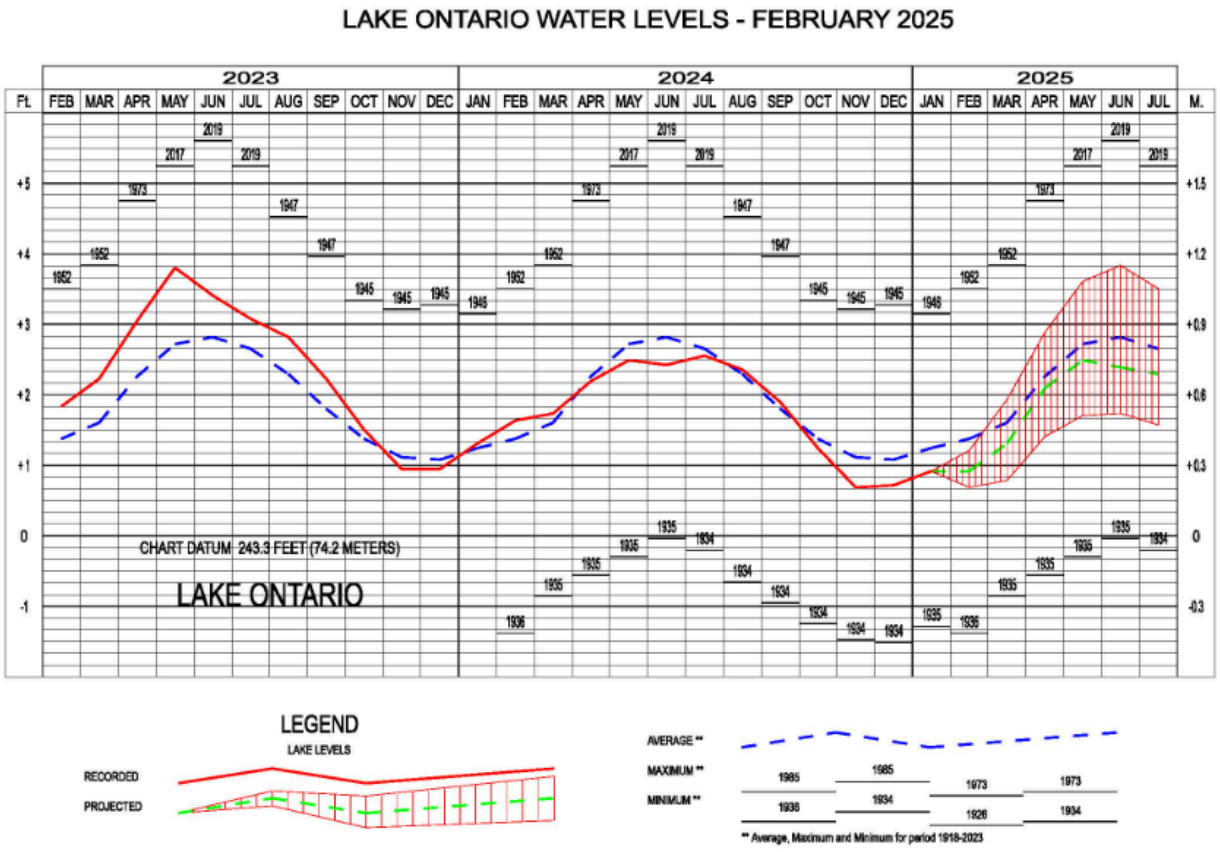
I. LAKE ONTARIO WATER LEVELS

(Constant vigilance!)

Pretty good news. Let's hope we don't have a series of deluges this spring.

From the US Army Corps of Engineers website:
Lake Ontario rose about 2 inches from December to January, reaching a level of 244.36 feet. This level is 4 inches below its January LTA level, 5 inches below last January's level, 27 inches below its January record high level, and 26 inches above its January record low level. Precipitation in this basin was 59% of its January average, contributing to below average water supplies*. **From February to May, Lake Ontario is projected to be up to 9 inches below last**

year's levels, and for the entirety of the 6 month forecast horizon, the level is projected to be 2 to 6 inches below LTA levels, 30 to 39 inches below record high levels, and 26 to 33 inches above record low levels



II. STAMP UPDATE

Here's the latest on STAMP. Two parts: First, a very critical review on the latest developments from the Buffalo-based Investigative Post; then a local view focusing on water quality of the Oak Orchard River.

Part A. This is insanity.

From the Investigative Post, Feb 9, 2025

This is insanity. Spend $100 million to build infrastructure for an industrial park developed in the middle of nowhere, then dole out hundreds of millions of dollars in subsidies to recruit companies to locate there.

That's what's happening in the rural Town of Alabama, population 1,777, some 13 miles northwest of Batavia.

The Genesee County Economic Development Center got the crazy idea of building what became the STAMP industrial park even though experts said it was too remote, lacking any sort of infrastructure and hemmed in by sensitive environmental and Native American lands. Politicians nevertheless gave the project a green light and oodles of money, including $33 million in seed funding from the Buffalo Billion program.

It took nearly a decade to land a tenant, at a great cost. The subsidies granted to Plug Power worked out to $4 million per job. A second recruit, Edwards Vacuum, was lured to STAMP after heavy lobbying from Sen. Chuck Schumer, who subsequently landed the company a piece of the CHIPS Act, legislation he sponsored in Congress. *(OONA note: $18M from the CHIPS Act)*

Most of the sprawling industrial park — the size of 945 football fields — remains fields and woods as the IDA continues to hunt for tenants.

Last week it held a public hearing on proposals from three developers who want to build a data center. As reported by our J. Dale Shoemaker, the size of the subsidies they're seeking is staggering; the number of workers they would employ are modest.

- STREAM U.S. Data Centers wants sales and mortgage tax exemptions totalling $472 million in exchange for 122 jobs. That works out to $3.9 million per job.
- PRP Real Estate Investment is seeking $239 million sales and mortgage tax abatements for 105 jobs. The cost per job is $2.3 million.
- Potentia Holdings has proposed $168 million in sales and property tax exemptions for 200 jobs. That works out to $838,244 per job.

Mind you, this is just the start of the subsidies**.** Whoever builds would be in line for state tax credits and most likely discounted hydropower from the New York Power Authority.

How long would it take for local and state governments to recoup its lost tax revenue through taxes paid by data center employees? Depending on which proposal was selected, anywhere from 115 to 375 years. How's that for a return on investment?

Related: An investigation by ProPublica and the Seattle Times that evaluated the track record of data centers on energy use, tax revenue and job creation.

Part B. Potential effects of STAMP effluent on water quality of the Oak Orchard River.

First, a bit of personal history. When I was a kid in the 50's and 60's my dad and I would go fishing in the Illinois River. We'd fish for carp and bullheads, because those were the only two species that could survive in the intensely polluted river. We ate what we caught - they tasted like mud. I remember seeing huge, school bus-sized masses of foam floating downriver from the dam at Ottawa. A bit later, in 1969 when I was in college, the Cuyahoga River in Cleveland, incredibly polluted, actually caught fire. Maybe you're old enough to remember the Randy Newman song, *Burn On* (note 1). Rivers have a long history of being sewage and garbage dumps. Rivers are great for turning your problem into somebody else's problem.

The risk of the Oak Orchard turning into another Cuyahoga is, clearly, near zero. But. as Dawn Borchert and Ron Bierstine reported at an OONA meeting last year, sportfishing is incredibly important to our local economy, with something like a $30M annual impact. Good water quality in the Oak Orchard River is a necessity to maintain or grow the sportfishing economy. Right now the water quality certainly seems to be adequate, but it's not ideal. The river is classified as "impaired", presumably because of higher than ideal phosphate levels, with most of the phosphate probably coming from nonpoint sources like runoff from agricultural fields. Phosphate is the "growth-limiting nutrient" for algae growth in the river, meaning that how much phosphate is present determines how much algae can grow. The river would be better off with less algae.

So, the plan, approved by a legally questionable permit issued by the DEC (note 2), is to take sewage and industrial wastewater, both treated by a wastewater treatment facility, and dump them into the Oak Orchard Creek, either at Shelby or Oakfield. Note that the water will be treated before discharge, so most of the potential contaminants will be removed.

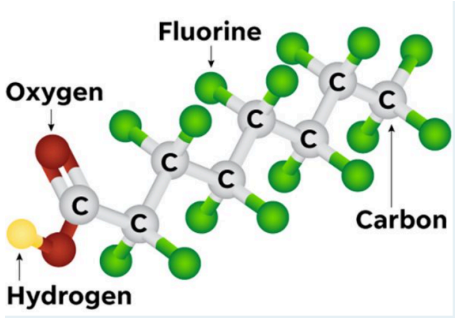
- Will the treatment facility be able to remove any and all contaminants? Of course not.
- Is there a possibility of mistakes that discharge contaminated water? Yes. No matter how well-intentioned the plan and how diligent the operators, mistakes can and do happen.
- How much additional phosphate would be acceptable? One could argue that **any** increase in phosphate concentrations should be viewed as unacceptable.
- Does that mean that if the average phosphate level of the discharge is below that of the creek itself, then all will be well? No it doesn't. This issue needs to be viewed in terms of long-term economic risk to our sportfishing industry.

- **Does our community want to accept the risk of having (treated) industrial wastewater pumped into our river?** It's a risk/benefits thing. What are the benefits? For the river there are no benefits, only risks. What about other types of benefits, like economic benefits?

Well, therein lies the problem. Economic benefits to the region are, to-date, negative, and they promise to be much more negative, with huge subsidies (paid for by citizens like us) for a paltry number of jobs. See the above Investigative Post article. Economically, STAMP has been vastly over-hyped and has vastly under-delivered. Then there's the ecological/ethical issue of building a gigantic industrial site, which comes with unavoidable ecological risks, next to pristine (protected) woods and right next to the land of the Tonawanda Seneca Nation. There is risk to the land and the people who live so close to the land, without any meaningful benefits.

A clear-eyed analysis of the project shows it to have a negative economic value, while simultaneously putting a valuable waterway, pristine lands, and the indigenous people of those lands at risk. It is lose-lose-lose-lose. The sensible thing to do would be to treat STAMP as what it is, a well-intentioned but ill-conceived and ill-executed project that should be treated as a sunk cost. The GCEDC should walk away from it and focus on other economic initiatives.

III. Forever Chemicals (PFAS, or perfluoroalkyl substances)



Perfluoro-octanoic acid, or PFOA, a specific example of a PFAS chemical

Introduction. Somewhat amazingly, I actually know a bit about this topic. Around the year 2000, I was involved in a technical effort to replace these "forever chemicals" with more benign materials in all Kodak products. At that time these chemicals were used in a great number of Kodak products, albeit at low levels. We interacted with the EPA, as well as with 3M and DuPont, at the time the two key producers of these chemicals. The following material comes partly from my own experience and partly from government studies.

What are the key PFAS chemicals? Although the category includes literally thousands of discrete chemical species, by far the the two most important, most widely distributed, and most

studied are **PFOS** (perfluoro-octanesulfonic acid, produced and used by 3M), and **PFOA** (perfluoro-octanoic acid, produced and used at the time by DuPont.) PFOS has the formula $C_8F_{17}SO_3H$, and PFOA is $C_7F_{15}CO_2H$. Their structures both have chains of carbon atoms to which are bonded fluorine atoms. Thus, a lot of C-F bonds, which are among the strongest bonds in organic chemistry.

Why are they so useful? The peculiar nature of the C-F bonds (note 3) give these chemicals the remarkable property of being resistant to both water and oil, which is very unusual for chemicals. Things don't stick to them. Thus PFOS can be formulated and sold as 3M Scotchgard stain repellent. PFOA was used in the production of Teflon, as well as in Dupont Stainmaster carpeting and Gore-Tex clothing. Remember those products? They worked great! You can't buy them now. In addition, these two materials, along with other, structurally related materials were used in stain-resistant pizza boxes, paper plates, eye makeup, dental floss, and a host of other applications. 3M materials are still used as key components of fire-suppressing foams at airports. These materials function incredibly well.

The problem: P, B, and T - a trifecta of badness.

- P is for Persistent. The strength of the C-F bonds along with the fact that Mother Nature really doesn't know how to break them down means that these compounds are very long-lived. Hence the name "forever chemicals."
- B is for Bioaccumulative. Mother Nature doesn't know how to get rid of them. It can't metabolize them, and it excretes them only very very slowly. Thus, PFOS gets absorbed into algae, little fish eat the algae, big fish eat the little fish, and eagles (or humans!) eat the big fish. The PFOS gets concentrated as it moves up the food chain. It is excreted from the bodies of the top predators only very slowly, over years.
- T is for Toxic. The first evidence on rats and monkeys suggested these materials functioned as developmental toxins, affecting development both i*n utero* and postnatal. More recent evidence suggests they may also be carcinogenic (emphasis on "may." Carcinogenicity at low exposure levels has not been firmly established yet.).

So, do I have this stuff in my body? The bad news is yes, you do. No doubt about it. A few parts per billion. As the story goes, when 3M started testing people's blood for PFOS, they couldn't find anybody who didn't have it! The only PFOS-free blood they could find was frozen blood from the 1950's, from Korean War recruits. That blood was drawn a year or so before 3M started making PFOS. Scary, huh? Well, the good news is that you probably have less in your body than you had 20 years ago. Average PFOS levels in blood have dropped to about ⅓ or ¼ of the earlier levels over that timeframe. PFOS appears to be excreted very slowly in your urine.

Should you be worried? To be honest, I don't know. My non-scientific gut feeling is "probably not" because there's not much you can do about it, and the average concentration in people seems to be falling, and also because of the incredible difficulty of getting meaningful, unambiguous toxicological data for such low levels of exposure. One exception: It appears that PFOS and similar materials may be concentrated in breast milk, so given the concern about

possible developmental toxicity, pregnant people (note 4) who plan to breastfeed may want to discuss limiting their exposure with their doctors.
Re PFAS in water: Normal water filters (like from Brita) don't do a good job of removing this stuff, but I think activated charcoal filters work somewhat better. Have a look at the EPA site for information and recommendations. As for pizza boxes and paper plates, they've been reformulated without PFAS, so don't worry about them. I'm not sure about the eye makeup though.
Finally, this is not a medical advice newsletter. If you're worried, talk to a medical professional.

The latest sensational headline, if you're into fretting or doom scrolling. PFAS materials are found in wastewater, and are retained in the solid residue from wastewater treatment plants. This residue has been widely used (with EPA encouragement until just recently) as fertilizer for agriculture, thus raising the possibility that the produce we buy at the supermarket may have elevated levels of PFAS.

For more information on health effects, please see the following EPA website which, as of 2/22/25 has not been removed from the web:

https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas

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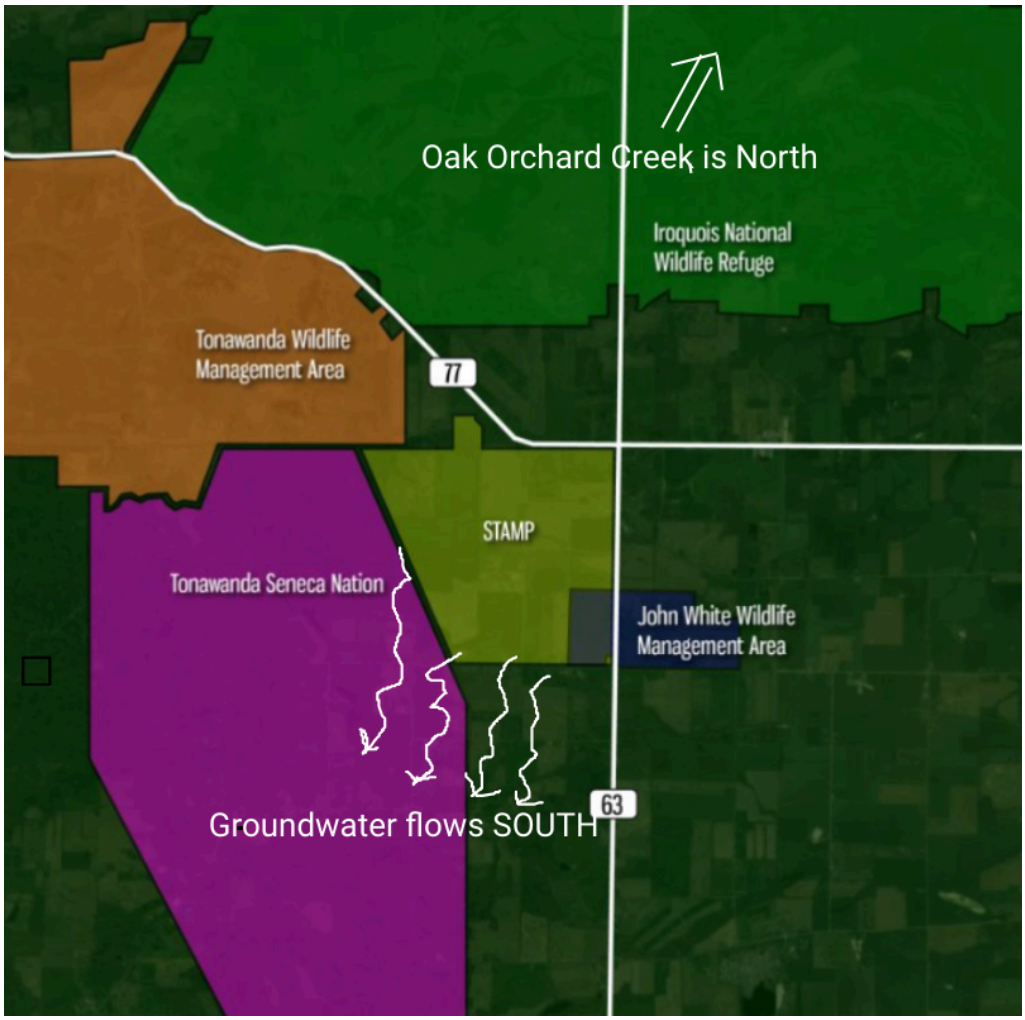
Note 1.
Now the Lord can make you tumble
And the Lord can make you turn
And the Lord can make you overflow
But the Lord can't make you burn.
Burn on, big river, burn on.

Note 2. "Legally questionable". As I understand it, discharge of any phosphate-containing water into an officially impaired waterway is not allowed. The DEC argued that the additional phosphate from STAMP would not add phosphate to Oak Orchard Creek, but would replace the phosphate that will no longer flow into the creek from what used to be agricultural land. Problem is, that's not true. Runoff from the STAMP site naturally flows south, not north to the creek. See the annotated map below. So industrial effluent from STAMP into Oak Orchard Creek does not does not "replace" anything. So the DEC erred by issuing the permit to allow discharge into Oak Orchard Creek. The permit should not have been issued, and now should be revoked. That's the argument. It's baffling that the DEC seems to have been unaware of the hydrology of the STAMP site during the permitting process.



Annotated map of the STAMP site (from the Investigative Post, annotated by DG)

Note 3. Fluorocarbon chains have very low dispersion forces as a result of very low C-F bond polarizability. Yeah, arcane chemical stuff.

Note 4. Forbidden speech. Apologies.

That's it for this issue. Thanks for reading. Expect our next issue around three months from now.