

## **Regular Meeting Agenda**

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Terrace Room – Second Floor  
Northbrook Village Hall, 1225 Cedar Lane  
Thursday, September 21, 2023

**5:30 PM**

**1. CALL TO ORDER**

**2. MINUTES APPROVAL**

A. Review and Approval of the August 17, 2023 Sustainability Commission Meeting Minutes

**3. PUBLIC COMMENTS**

Please Note - Members of the public wishing to respectfully share thoughts about any matter concerning the Northbrook Sustainability Commission may do so by coming to a meeting and speaking during the “Public Comment” time on general matters, or by speaking if and when comment is called on a specific matter that is listed on the agenda. Members of the public can also submit a written comment via the Village’s website. Each written comment submitted on the website will be delivered to each member of the Sustainability Commission prior to the meeting but will not be read out loud at the meeting unless specifically requested.

**4. COMMUNITY PLANNING REPORT**

**5. BUCKTHORN AND NORTHBROOK’S INVASIVE SPECIES LIST**

**6. EARTH DAY PLANNING**

**7. UPDATES ON OTHER ITEMS**

A. Communications Initiatives

B. Solar Permits

C. Waste Collection Data

**8. OLD BUSINESS**

**9. NEW BUSINESS**

**10. REMARKS FOR THE GOOD OF THE ORDER**

**11. NEXT SCHEDULED MEETING**

October 19, 2023

**12. ADJOURN**

The Village of Northbrook is subject to the requirements of the Americans with Disabilities Act of 1990. Individuals with disabilities who plan to attend this meeting and require certain accommodations in order to allow them to observe and/or participate in this meeting, or who have questions regarding the accessibility of this meeting or facilities, are requested to contact Debbie Ford, 847 664-4013, promptly to allow the Village of Northbrook to make reasonable accommodations for those persons. Hearing impaired individuals may call the TDD number, 847 564-8645, for more information.

## Murray, Tessa

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**From:** John Albrecht <albrecht02@gmail.com>  
**Sent:** Friday, September 8, 2023 12:16 PM  
**To:** Murray, Tessa  
**Cc:** Shital Pandit GGN  
**Subject:** MWRD Tour on Oct 11 at 9:30 AM  
**Attachments:** MWRD Fact\_Sheet\_Kirie in Des Plaines.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Tessa, just in case you were not already notified, please inform the SC about a tour of MWRD's Kirie Water Reclamation Plant on Wed. Oct 11 at 9:30 AM:

<b>Kirie WRP</b>	<a href="#">701 W. Oakton St., Des Plaines</a>	Wednesdays, 9:30 am Duration: 1.5 hours	<a href="#">Fact Sheet</a> see attached
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By Sept. 26, anyone interested should complete and submit the MWRD's **mandatory** waiver form at:  
<https://mwrdd.org/form/facility-waiver-form>  
and mention Go Green Northbrook as the "group" on the form.

If someone prefers to carpool, let us know. Thanks again.  
John A



Virus-free. [www.avast.com](http://www.avast.com)

**Beware External Email - Think Before You Act**



## James C. Kirie Water Reclamation Plant



*Kirie Water Reclamation Plant*

The James C. Kirie Water Reclamation Plant (WRP) is one of seven wastewater treatment facilities owned and operated by the Metropolitan Water Reclamation District of Greater Chicago (MWRD). The MWRD is the wastewater treatment and stormwater management agency for the City of Chicago and 125 Cook County communities. We work every day to mitigate flooding and convert wastewater into valuable resources like clean water, phosphorus, biosolids and natural gas.

If you live within our service area, the water that goes down your toilet, sinks and drains eventually comes to us to be cleaned. We treat wastewater from homes and businesses throughout our 883-square-mile service area in addition to stormwater from some communities. All of this wastewater and stormwater flows through local sewers into our interceptors before flowing to WRPs where we clean the water and recover resources using a combination of physical, biological, and sometimes chemical, treatment processes.

The MWRD provides this service for over 5 million people. Nearly 450 billion gallons of wastewater is treated by our seven facilities every year.

The Kirie WRP opened in 1980, making it the newest of the MWRD's seven wastewater treatment plants. The plant is named after

James C. Kirie, a Commissioner with the MWRD and a strong supporter of the MWRD's Tunnel and Reservoir Plan (TARP). At the time of its opening in Des Plaines, the MWRD's six other plants operated with partial computerization and partial manual controls. The 108-acre Kirie Plant is the first among the MWRD's plants to feature fully automated operations. The award-winning Kirie Plant serves a population of about 264,000 residents in a 65.2-square-mile service area which includes Arlington Heights, Elk Grove Village, Mount Prospect, Wheeling, and part of Rolling Meadows and Des Plaines.

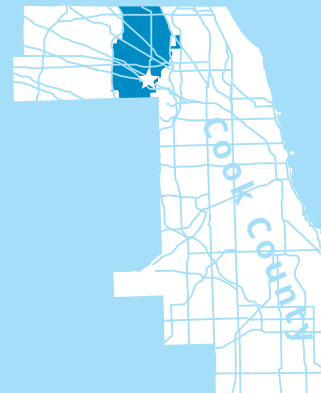
### Wastewater Treatment

Wastewater treatment works using the same processes that occur naturally in rivers to clean water, incorporating physical and biological processes with a combination of air, gravity and microorganisms. In a WRP, cleaning is sped up dramatically, so a process that could take weeks in a river happens over the course of hours.

The goal of wastewater treatment is to reduce contaminants in water, such as suspended solids, biodegradable organic matter, pathogenic bacteria and nutrients. Contaminants are removed during three major phases of treatment: primary, secondary and tertiary. All MWRD WRPs use primary and secondary treatment. Some of our facilities also apply tertiary treatment due to the nature of the waterways into which they release water.

**Primary treatment:** Wastewater arrives at the plant and passes through coarse screens to filter out large debris. Then it is pumped up from sewer level and flows by gravity throughout the treatment plant. In primary treatment, primary settling tanks use physical and mechanical means to remove fats and oils and to separate solids from the water. The separated solids are pumped away to undergo their own treatment process and eventually become biosolids, a sustainable alternative to chemical fertilizers. By the end

### Kirie WRP Service Area



The Kirie WRP serves 264,000 residents in a 65.2-square-mile service area northern Cook County, Illinois.

### Kirie WRP Communities

Arlington Heights	Mount Prospect
Buffalo Grove	Prospect Heights
Des Plaines	Rolling Meadows
Elk Grove Village	Wheeling

### About Kirie WRP

- 701 Oakton Street, Des Plaines, IL 60018
- 49 employees
- 7 buildings on 108 acres
- In operation since May 12, 1980

### Receiving Stream

- Higgins Creek

### Treatment Volume

- 52 million gallons/day (avg.)
- 110 million gallons/day (max.)

of primary treatment, 60-80% of the solids have been removed.

**Secondary treatment:** In secondary treatment, a community of microorganisms help remove organic material from the wastewater. The microbes need oxygen to thrive, so air is pumped through the water in secondary aeration tanks. Next, the water enters the final settling tanks where remaining solids settle to the bottom and clean water flows out the top.

**Tertiary treatment:** Tertiary treatment includes any additional processes used to further clean the water after it passes through secondary treatment, including filtration and disinfection via ultraviolet light exposure or injection of chemicals containing chlorine. At Kirie, water is disinfected by injecting chlorination and dechlorination chemicals, filtered by sand filtration and finally aerated via post-aeration tanks. Clean water that has passed through the WRP treatment processes is released from the Kirie WRP into Higgins Creek. It only takes 24 hours for wastewater to be converted from raw sewage to clean water. The same transformation would require several weeks in a natural waterway.

**So the water is clean; what happens to all the solids?** Solids, also known as sludge, removed from the wastewater during primary and secondary treatment are sent to temperature-controlled digesters where microorganisms break them down in a process similar to composting. As with compost, the digestion process converts nutrients into forms that plants can use, kills pathogens, and reduces odors. After digesting, the sludge passes through centrifuges which work like a washing machine, spinning at high speeds to dewater the sludge. The resulting drier sludge is aged and air-dried to refine moisture content and further reduce odors.

The sludge removed from wastewater every day at the Kirie WRP is pumped to the Egan WRP for digestion and then hauled by truck



MWRD biosolids, a sustainable alternative to chemical fertilizers, help beautify the Chicago Park District's Ping Tom Park.

to solids management areas for additional treatment and drying. The resulting biosolids are a sustainable alternative to chemical fertilizers and are used at golf courses, athletic fields, parks and recreational facilities, agricultural fields, forests, and for restoration of strip mines and other disturbed lands.

**Resource recovery:** In addition to primary, secondary and tertiary treatment processes, we're also testing innovative technologies and methods of recovering nutrients, such as phosphorus, from wastewater. Nutrient pollution is harmful to waterways and aquatic life and poses a threat to healthy drinking water supplies. Phosphorus is a non-renewable resource that is in dwindling supply and is essential for high-yield agriculture and a myriad of industrial uses. The MWRD has the means to recover up to 10,000 tons per year of phosphorus and convert it into a usable, marketable product.

**Sewerthermal energy:** The "sewerthermal" energy recovery facility at Kirie began as a demonstration project in 2012. The plant's aeration pools maintain a near-constant temperature of 55 degrees Fahrenheit, making them ideal as heat transfer sources to heat and cool the buildings at the plant. The sewerthermal energy recovery is made possible through a partnership with chemical engineers at the University of Illinois-Chicago and funding support from the Illinois Clean Energy Community Foundation. The geothermal energy recovery project allows the plant to reduce its heating and cooling expenses and the MWRD estimates a full return on its financial investment in less than eight years.

**How do we know we're doing a good job?** Wastewater treatment facilities are regulated under the Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) permit program. NPDES permits set rigorous standards that the water from the plant must meet. The National Association of Clean Water Agencies has given the Kirie WRP the association's highest awards for compliance with these standards. We also see the benefits of our work resulting in increased recreation on the waterways, such as kayaking and canoeing, a rebounding aquatic habitat and increases in fish species. We're reducing energy use at our facilities with a goal of reducing greenhouse gas emissions, and we're recovering valuable resources and expanding the use of biosolids throughout the region.



Microbes such as these stalked ciliates help remove bacteria and organic material from the water in secondary treatment.



**If you flush a toilet in Mount Prospect, it takes four hours to reach Kirie WRP (in dry weather) and about 24 hours to go through the treatment process before it is released as clean water to the Higgins Creek.**

**Coarse screens catch large objects and debris in water as it enters a wastewater treatment plant.**

Some of the things that have turned up in the coarse screens of our plants over the years include:

- ✓ A 14" diameter snapping turtle
- ✓ Car wheels and tires
- ✓ 2x4 studs
- ✓ Super balls
- ✓ Parking blocks
- ✓ Money
- ✓ A huge ball of rope
- ✓ A 50 foot extension cord
- ✓ Mop heads
- ✓ Tree branches
- ✓ Two opossums
- ✓ ID card of a man from Argentina
- ✓ A bowling ball (with no pins)
- ✓ Fish
- ✓ A prosthetic leg



UPDATED 3/20/19



## MEMORANDUM

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**To:** Sustainability Commission  
**From:** Tessa Murray, Sustainability Coordinator  
**Date:** September 21, 2023  
**Subject:** Buckthorn and Northbrook's Invasive Species List

At the August Sustainability Commission meeting, a motion passed to add a consideration for amendment of the municipal code regarding invasive plants to the September meeting agenda.

The list of invasive weeds can be found in Sec. 25-70 of the Municipal Code. The majority of the plants already on this list are herbaceous and can be mowed to remove. This section is enforced on a complaint-basis by the Code Enforcement Officer in the Development and Planning Services Department. DPS will respond to complaints by conducting inspections. If a violation is confirmed, DPS sends a letter notifying the property owner that a complaint was received and instructing that removal of the weed occurs within 10 days to ensure compliance.

The Sustainability Commission's motion pertains to adding buckthorn to the invasive species list that is enforced per the Municipal Code. The Commission requested a compilation of how this is addressed in surrounding communities (see attached table for summary). Only one municipality in our area requires buckthorn's removal, while the rest follow similar or less stringent approaches to Northbrook's process.

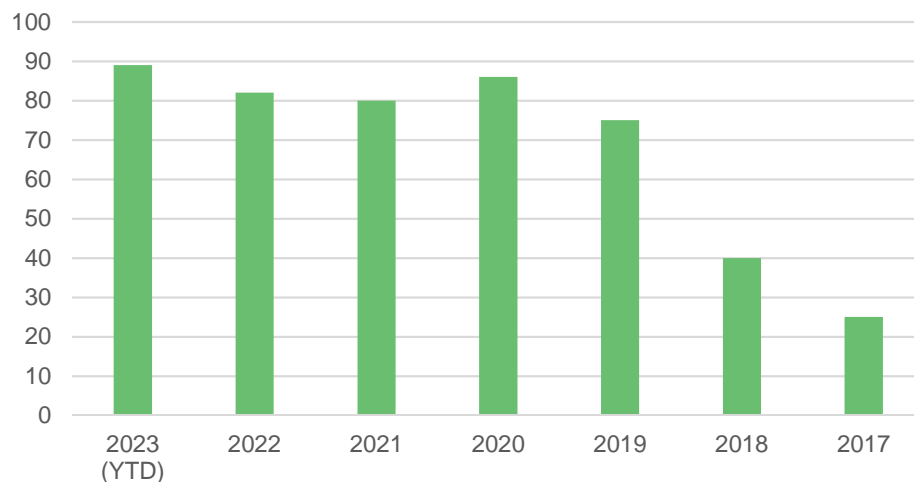
Several staff discussions were held to gather more information regarding this request. Following these discussions, several points must be considered by the Commission:

1. Creation of a regulatory framework: in response to the Commission's request, the Village is considering the creation of a structured regulatory framework for addressing invasive plants. Some questions raised by Village staff include:
  - a. What is our definition of noxious invasive species?
    - i. Should the Village no longer call out specific species, but instead refer to a state agency such as the Illinois Department of Agriculture or Illinois Department of Natural Resources?
  - b. Where in the code would something like buckthorn be regulated? Buckthorn can present as a tree, shrub, or groundcover.
    - i. Trees are defined in Chapter 25 of the code under Articles II and V. Article II describes Northbrook's tree preservation ordinance, in which nuisance trees such as buckthorn are not subject to the same protection as others. Article V requires removal of trees infested with pests or diseases such as Emerald Ash Borer and Dutch Elm Disease.
    - ii. Invasive shrubs are not mentioned in the code.



- iii. Groundcover weeds are covered by Chapter 25, Article IV as described above (Sec. 25-70).
2. Potential impact of regulation: a tree canopy study conducted by the Chicago Region Trees Initiative estimates up to 30% of Northbrook's canopy may be buckthorn, and this would largely be found on private property. Given the scale of the issue, additional evaluation is required to consider the following:
  - a. What will the staff time and budget implications be like to enforce such a regulation?
  - b. How will the Village address potential social repercussions to regulating the use of a shrub that is commonly used for screening?
3. Carrot vs. stick approach: building upon current Village programs that reward residents who remove buckthorn on their property is a potential option for the Commission.
  - a. Public Works offers a buckthorn debris collection program which has become more popular in recent years.

Buckthorn Pickup Work Orders



- b. For consideration during the annual budget process, the Commission could recommend either a remove and replacement program modeled off the Wild Ones program, or a cost-share program similar to how rain garden installations can be reimbursed by the Village.

At their September meeting, the Sustainability Commission is asked to consider how they may want to move forward regarding CAP item GS 2-1, to implement invasive species control

Surrounding Community Weed Enforcement Review [side further information and answer any questions.](#)

Municipality	Specific Weeds Enforced	Buckthorn mentioned in Code?
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Arlington Heights	Only length of plants considered in enforcement action, not species.	No
Barrington	Only length of plants considered in enforcement action, not species. Planted areas/landscape beds not included.	No
Bartlett	Only length of plants considered in enforcement action, not species.	On recommended list for landscape plans.
Deerfield	Same weeds as Northbrook's	Only as it pertains to its lack of protection in the tree preservation ordinance; instead "mitigation credit", any fees owed regarding tree removal may be offset.
Elk Grove Village	Same weeds as Northbrook's plus custom list	No
Evanston	Only length of plants considered in enforcement action, not species.	Only as it pertains to its lack of protection in the tree preservation ordinance.
Glencoe	Not specified	Only as it pertains to its lack of protection in the tree preservation ordinance.
Glenview	Only length of plants considered in enforcement action, not species, except natural landscaping.	Only as it pertains to its lack of protection in the tree preservation ordinance.
Grayslake	Same weeds as Northbrook's plus custom list	No
Highland Park	Noxious weeds as defined by IL Department of Agriculture plus others	Only as it pertains to its lack of protection in the tree preservation ordinance.
Lincolnshire	Same weeds as Northbrook's, plus custom list	Only as it pertains to its lack of protection in the tree preservation ordinance, and removal required for new construction.
Lincolnwood	Noxious weeds, see definition	No
Mount Prospect	Noxious weeds not including trees and shrubs	No
Niles	Same weeds as Northbrook's plus custom list	No
Park Ridge	Same weeds as Northbrook's plus custom list	In a "do not plant" list for landscape plans.
Schaumburg	Same weeds as Northbrook's plus garlic mustard	Only as it pertains to its lack of protection in the tree preservation ordinance.
Streamwood	Same weeds as Northbrook's	No
Wheeling	Same weeds as Northbrook's plus buckthorn, kudzu, barberry, and nuisance weeds.	Yes: handled through a complaint-based system overseen by the Code Enforcement Division. There are instances where PW is also notified. The standard enforcement process begins with the issuance of a notice to the property owner, outlining the presence of buckthorn and the requirements for removal. In cases of non-compliance, efforts are made through the Adjudication Hearing process, and if necessary, a motion may be pursued for the Village to contract for removal. The associated expenses are covered through a budgeted line item. Before removal, cost estimates are obtained. The Village covers these service costs, invoices the property owner for reimbursement, and reserves the right to place a hold on the property for unpaid fees. Unresolved invoices are eventually referred to a collections agency for recovery.
Wilmette	Same weeds as Northbrook's	Only as it pertains to its lack of protection in the tree preservation ordinance.



## MEMORANDUM

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**To:** Sustainability Commission  
**From:** Tessa Murray, Sustainability Coordinator  
**Date:** September 21, 2023  
**Subject:** Earth Day Planning

Following the expression of interest of planning an Earth Day Fair at the August Sustainability Commission meeting, staff provides the following response.

Village sponsored/run events need to be budgeted: an April 2024 Earth Day event (separate from the recycling event) wasn't budgeted into the current FY23/24 budget. If the Commission wishes to spearhead this event's planning and development, staff must work with them to fully flesh out the how, when, where and how much plan to estimate direct and indirect costs to the Village to be proposed with DPS or VMO budget requests during the FY24/25 review cycle.

Essentially, this is a good effort by the Commission, but an event in April 2024 is not possible as a Village event, so we need to think of this as an April 2025 event and take the next several months to consolidate the planning and cost estimates for the next budget creation process (before February).

If an outside (non-Village) organization wishes to have such an event, Village staff can assist for the Special Event permitting process.

At the September meeting, staff will provide information regarding estimated costs to be considered for a proposal to include a 2025 Earth Day Fair in the FY24/25 budget. The Commission should also decide at this meeting whether or not they wish to move forward with a non-Village fair event for Earth Day 2024.