Doug Fluhrer Park - 2023

Site Information and Background:

General Information:

Name: Doug Fluhrer Park
Location: 2 North St, Kingston, ON, K7K 7J7, Canada (Fluhrer Parking Lot)
- Coordinates: 44.23852662557307, -76.4774017072013

Year of Identification: 2021
Responsible Authority: Swim Drink Fish Canada - Kingston Water Monitoring Hub
Monitoring Points: Figure 1 (appendix)

Waterbody Information:

Waterbody type: Freshwater, River (Great Cataraqui River, Kingston Inner Harbour)
Watershed: Figure 2 (appendix)
Annual Precipitation for Watershed (mm): 41.12 mm (1.62 inches)

Surrounding Land Use:

- Residential
  - Rideaucrest Home (retirement home): *175 Rideau St, Kingston, ON K7K 3H6*
  - Rideaucrest Towers (apartments): *205 Rideau St, Kingston, ON K7K 7B1*
  - Frontenac Village Condominium: *1 Place D'Armes, Kingston, ON K7K 6K1*
- Harbour
  - Kingston Marina: *349 Wellington St, Kingston, ON K7K 6N7*
- Parkland
  - Picnic areas
  - Paved pathway (K&P Trail)
  - Field
  - Molly Brant Point Park (north end of shoreline): *Kingston, ON K7K 1Z7*
- Commercial
  - MetalCraft Marine: *347 Wellington St, Kingston, ON K7K 6N7*
- Parking Lots
  - Doug Fluhrer Lot: *2 North St, Kingston, ON K7K 7J7*
  - Anglin Bay Lot: *1 Bay St, Kingston, ON K7K 1H4*
  - Rideaucrest Parking Lot: *Rideau St, 205 Rideau St, Kingston, ON K7K 7B*

Residential Use Summary:

Three areas of residence are near the Doug Fluhrer Park shoreline. This can impact the number of people found walking in that area and increase the litter and debris found on and around the shore. Discharge from these buildings could also pose a risk of contamination.

Harbour Use Summary:
Kingston Marina is located next to Doug Fluhrer Park, which could impact the water quality from the boating activity around the area and any chemicals or biological hazards present within the facility.

Commercial Use Summary:
MetalCraft Marina is the primary commercial building in the area. It poses a significant risk for chemical, biological, and physical hazards because of the equipment and tools used to build ships. This concern can also be noted in the litter and debris left in the green and paved spaces around the building, each of which could end up in the lake.

Parkland and Parking Lot Use Summary:
A significant amount of green space within the park can be used for picnicking, pets, and other wildlife. Multiple parking lots are also located within the zone of influence and close to the bathing area. A high volume of vehicles have been observed in these parking zones.

Upstream Pollution Risks:

Based on the watershed for the area of Doug Fluhrer Park, stormwater runoff from multiple residential, parkland, commercial, and parking lot areas pose a potential upstream pollution risk. These include: Belle Island (Cataraqui Park), Belle Park, offices in the area, and large residential areas at Cataraqui River East. There are also potential impacts from a few smaller streams that lead into the river upstream.

Potential Sources of Pollution:

1. Microbiological Hazard Assessment

Potential Sources of Fecal Contamination

- Combined Sewer Overflows (CSOs) (Figure 3)
    - A key potential source of fecal contamination at this site is overflow of the combined sewer outfalls located at the north and south ends of the park. There are an additional three CSOs within approximately two kilometers of the park, located at Belle Park, at the River Street Pump Station, and at the Barrack Street ferry ramp. Historical data from Utilities Kingston's sewage overflow log suggest that CSOs in the Kingston area occur largely after heavy rainfall (Tables 1 and 2 - appendix).
    - As of June 6, 2023, the most recent CSO occurred on April 5, 2023.

    - Currently, no data is available listing historical overflows at specific CSO locations in Kingston.

- Waste tanks of boats at Kingston Marina
    - The Kingston Marina and MetalCraft Marine have waste tanks on site within the boats kept at each facility. These have the potential to pose a microbiological hazard if improperly managed and maintained.

- Contaminated sediment in the river bed
    - Contaminated sediment has been noted by the Government of Canada within Kingston's Inner Harbour, which includes Doug Fluhrer Park[1]. This is due to previous use of the land. The types of contaminated material can be noted in Table 3 (appendix).
    - There is the potential for biological effects via direct contact with sediment or ingestion of contaminated foods, making this contamination a source of microbiological concern[2].
    - Land use included: Ship and locomotive building, Coal gasification plant, Lead smelter, Tannery, Battery-manufacturing plants, Mill works, Fuel stations, Woolen mill, and Waste disposal sites.

- Stormwater Runoff from:
    - Several parking lots are located within 50m of the shoreline.
        - There are three parking lots within the vicinity of Doug Fluhrer Park. Each area has a significant amount of gray space, which can contribute to fecal matter entering the water during rainfall.
    - Park adjacent to the shoreline
        - The parkland next to the waterfront has several paved pathways that can impact microbiological contamination from runoff.

Other Environmental Sources of Fecal Contamination

- Birds
    - A high concentration of birds was noted throughout Doug Fluhrer Park. Furthermore, a high concentration of bird fecal matter was noted, which could impact microbiological contamination in the water.

---

[1] "Federal Contaminated Sites Inventory." *Treasury Board of Canada Secretariat*, Government of Canada, 2023, https://www.tbs-sct.gc.ca/fcsi-rscf/numbers-numeros-eng.aspx?qid=767349&view=cm#ctl04_ResultsByHeading. Accessed 2 June 2023.

[2] "Application of the Canada-Ontario decision-making framework for contaminated sediments in the Kingston Inner Harbour," RMC Environmental Sciences Group, 2014, p. iii

    - Some of the birds identified included: Canadian geese, ducks and waterfowl, seagulls, pigeons, and red-winged blackbirds. The highest concentration noted was of Canadian geese.
- Other Wild Animals
    - A few other wild animals that could contribute to fecal contamination were noted upon site observation.
    - Animals noted included: squirrels, muskrats, snakes, and turtles.
- Pets
    - Residential space surrounds Doug Fluhrer Park, and the park has open grassy areas and pathways which can be used to walk pets. Multiple dogs were noted close to the shoreline, and their high frequency could contribute to fecal matter in the area.
- Swimmers
    - No swimmers were identified at Doug Fluhrer Park.

Overall Risk from Microbiological Hazards:

- Combined Sewer Overflows (CSOs): **HIGH**
    - Historical data on Kingston's CSOs show that overflows are frequently caused by heavy rainfall. This is of particular concern for the CSOs close to Doug Fluhrer Park. The 2021 EHSS report identified that between July 6 and August 17, 2021, there were six CSO events, with the Belle Park CSO (north of Fluhrer Park) overflowing for every occasion and the Douglas Fluhrer South CSO overflowing during three events. From this data, it can be inferred that the likelihood of overflow in the area is high, which could directly contribute to increased fecal and microbiological contamination of the site.
    - Heavy rainfall appears to be the primary cause of CSOs in Kingston, leading to further concern for Doug Fluhrer Park, depending on the weather in the area. If Kingston experiences a high volume of precipitation in the next few months, the risk level for microbiological hazards from CSOs will increase.
        - Table 4 (appendix) shows historical data on the area's rain pattern. If pre-existing conditions persist throughout the 2023 monitoring season, CSOs may increase the area's risk level.

- Waste tanks of boats at Kingston Marina and MetalCraft Marine: **MEDIUM**
    - The proximity of both facilities to the bathing and swimming area at Doug Fluhrer Park increases the risk level of this hazard. Improper treatment of this waste could result in accidentally dumping microbiological contaminants into the water, leading to hazardous swimming conditions and effects on visitor health.
    - The number of boats and motorized watercrafts in the vicinity increases the likelihood that microbiological contaminants could enter the surrounding body of water.

- Contaminated sediment in the river bed: **HIGH**
    - Contamination of the sediment around Doug Fluhrer Park from the history of industry in the area actively contributes to microbiological contamination of the site. A major 2014[3] report by the Royal Military College's Environmental Sciences Group summarized prior research and offered new data collected between 1999 and 2014. The report makes these conclusions, among others:
        - "...the sediment contamination has the potential to cause biological effects to human and ecological receptors through direct contact with the sediment and through ingestion of contaminated foods" (p. iii)
        - "Based on the proposed sediment management strategy the total area warranting sediment management to achieve acceptable risks to human and wildlife consumers of fish corresponds to 27 ha. The estimated total volume of sediments to be managed is 91,000 m^3 " (p. xi)
        - "The KIH HHERA has identified that there are both potential human health risks and potential ecological risks from sediment and biological contamination in the southwest portion of the KIH. Management actions are needed to address unacceptable risks posed by the contaminated sediments in this area." (p. x)
    - Thus, the contamination of the sediment at this site proves to be of high risk level for swimmers and visitors in the area. Ingestion of sediment is of particular concern for the health and safety of humans and animals.

- Animal Fecal Matter: **HIGH**
    - Visits to Doug Fluhrer Park note many large birds and a high frequency of fecal matter. A significant amount of bird fecal matter was identified along the shoreline and near the grass before the bathing area. This was also noted on the paved pathways, which could be impacted by runoff.
        - The City of Kingston appears to be trying to clean these walkways using a pavement cleaning machine (noted on June 2, 2023). However, upon inspection following the cleaning procedure, fecal matter remained on the pathways.
    - Frequent sightings of other wildlife, including large quantities of Northern Map turtles, snakes, and muskrats, may also impact and increase the risk of fecal contamination.
    - Furthermore, as previously noted, numerous pets were observed in the area in the 2023 site assessments. This can contribute to the high-risk fecal matter level that can run into the water.

[3] *Application of the Canada-Ontario Decision-Making Framework for Contaminated Sediments in the Kingston Inner Harbour*. Environmental Sciences Group, February 2014, https://drive.google.com/drive/folders/18VKO62F3GNqS5w2f8zjJsGkvG_TBYE5h. Accessed 6 June 2023.

- Swimmers: **LOW**
    - Active swimmers were not noted, so they are not considered high risk due to their lower frequency.

2. Chemical Hazards

Potential Sources of Chemical Contamination

- Contaminated Sediment
    - As of June 2023, the Government of Canada has identified that Kingston's inner Harbour Marsh, which includes the area of Doug Fluhrer Park, is of high priority for action due to active sediment chemical contamination from previous land use[1]. Table 3 (appendix) identifies the current status and chemical contaminants in the area.
    - The chemicals identified include: metals, metalloids, organometallics, PCBs, and PCDD/Fs.

- Commercial/Industrial Discharges
    - MetalCraft Marine:
        - Potential for MetalCraft Marine's construction of high-speed boats and work boats to result in chemical contamination of Doug Fluhrer Park due to poorly managed activities and tools.
    - Kingston Marina and Motorized Watercrafts
        - Kingston Marina is found directly adjacent to Doug Fluhrer Park, which can impact the level of contamination in the area. A high frequency of boats can lead to the dumping of chemicals into the water, such as spilled oil and fuel.
- Stormwater Runoff From:
    - Parking Lots:
        - The three parking lots in the vicinity can impact the chemicals entering the water from stormwater runoff. The site is downhill from one main lot (20 m away from the shore), which can affect runoff into the water.
    - Parkland:
        - Paved walking paths close to the shoreline allow runoff into the river. This is particularly important due to the small downward slope towards the shoreline and near the pathway.
        - Green spaces in the park could affect the water due to fertilizer and pesticide runoff. However, it is not evident if the City of Kingston uses them in this area.
    - Residential:

- Rideaucrest Home and Rideaucrest Towers are located uphill from the shoreline, which could impact chemical contamination from the area. The area around both buildings is paved, which increases the chance for stormwater runoff into the parkland below.

Overall Risk from Chemical Hazards:

- Contaminated Sediment: **HIGH**
  - As the Government of Canada has identified, the chemicals found in the sediment at Doug Fluhrer Park and within the river is of high-priority due to its significant risk level. These chemicals can impact visitor health from exposure and be biomagnified through the local food chain. Accidental ingestion during swimming or consumption of fish from the area poses a high risk of illness and negative health effects[4].
  - The interaction and combination of this sediment with chemicals from commercial discharge and stormwater runoff could also pose a risk. However, without knowing the complete details of contaminants in the water, this cannot be confirmed.

- Commercial/Industrial Discharge: **MEDIUM/HIGH**
  - The multiple sites of commercial and industrial use around Doug Fluhrer Park as of 2023 poses a medium to high risk to the water quality and visitor health and safety. Kingston Marina and MetalCraft Marine are of particular concern due to the number of boats in the area (10+) and its proximity to the bathing area. Dumping chemicals from both locations, such as gasoline or motor oil, may impact the water quality.
    - These may affect the water quality; however, more data is needed to conclude the extent to which motorized watercrafts circulate chemical contaminants at this site.

- Stormwater Runoff: **MEDIUM**
  - The combined impacts of parkland, parking lots, and residential land use near Doug Fluhrer Park contribute to a medium risk level for chemical contamination from stormwater runoff. The significant gray space from the parking lots, paved walkways, and residential areas allows contaminants to easily runoff into the water.
  - The parking lots in the area can potentially accumulate gasoline and other oil-based substances from parked vehicles. Doug Fluhrer Lot's proximity (>20 m) from the water is of particular concern for runoff contamination. The parking lots for Kingston Marina and MetalCraft Marine may also accumulate a more significant and diverse amount of chemicals due to transporting boats, equipment, and tools.

[4] "Kingston Inner Harbour (KIH) Sediment Management Project." Government of Canada, 18 August 2022, https://iaac-aeic.gc.ca/050/evaluations/proj/83878. Accessed 2 June 2023.

- Regarding the park's green spaces, there is the potential for fertilizer and pesticide use by the City of Kingston. The area appears to be actively maintained by the city (as a pavement cleaning machine was observed on June 1, 2023), so the use of fertilizers and pesticides can be inferred. However, this cannot be considered an active chemical contamination hazard without confirmation of chemical use.

3. Other Biological Hazards

Other Potential Biological Hazards

- Cyanobacteria
  - Although cyanobacteria was not noted during observations, the conditions of Doug Fluhrer Park can lead to bloom growth. Furthermore, Kingston's Inner Harbour has had a history of cyanobacteria blooms as recent as 2020[5]. The potential for growth during this season's monitoring period is of concern.

- Schistosomes (Swimmer's Itch)
  - As of June 2023, no cases of swimmer's itch have been reported at Doug Fluhrer Park.

- High Volumes of Aquatic Plants in the area
  - A high number of aquatic plants were noted in the assessment of Doug Fluhrer Park in 2023 and the initial EHSS in 2021. The area has a significant volume of plants along the shoreline, as well as just below the surface of the water closest to the shore. A complete estimate of the amount of aquatic plants further into the water cannot be noted as the water clarity decreases with distance.
  - Kingston has a high presence of aquatic invasive plant species that grow alongside and in water[6]. These include: giant hogweed, water soldier, and curly leaved pondweed[6,7]. The noted species can have an impact on water quality both biologically and through disruption of natural ecosystems [6,7]. Giant hogweed also poses a risk to swimmers when in contact[6]. These have not been officially identified at Doug Fluhrer Park, however, their presence would align with other sightings in Kingston.

---

[5] "Public health warns of blue-green algae in Kingston's Inner Harbour." *The Whig Standard*, 20 August 2020, https://www.thewhig.com/news/local-news/blue-green-algae-discovered-in-kingstons-inner-harbour. Accessed 2 June 2023.
[6] "Invasive Species." *City of Kingston*, 2023, https://www.cityofkingston.ca/resident/trees-nature/invasive-species. Accessed 1 June 2023.
[7] "Invasive Species of the Cataraqui Region." Cataraqui Region Conservation Authority, 2010, https://www.crca.ca/wp-content/uploads/PDFs/LakeReports/Appendix5-InvasiveSpecies.pdf. Accessed 1 June 2023.

Overall Risk from Other Biological Hazards:

- Cyanobacteria: **LOW**
    - Cyanobacteria poses a risk to swimmers due to its impact on human health, including symptoms such as abdominal pain, headaches, and nausea. Doug Fluhrer Park is part of Kingston's Inner Harbour, which has had a recent history of cyanobacteria blooms in the area. However, currently no blooms have been detected, so the risk level for swimmers and those using the bathing area remains low.

- Schistosomes (Swimmer's Itch): **LOW**
    - No cases of swimmer's itch have been reported at Doug Fluhrer Park.

- Aquatic Plants: **LOW**
    - The biological hazard of aquatic plants at Doug Fluhrer Park is considered low due to their impact being more significant as a physical hazard for slipping, decreasing visibility, or entanglement. They still pose a risk to swimmers biologically due to the potential presence of invasive species and the impact this can have on water quality. As well, coming into contact with some of these species can result in skin irritations and infection. However, without confirmation of these species on this site, the risk level remains low for swimmers.

4. Physical Hazards and Aesthetic Considerations

Sources of Subsurface Physical Hazards

- Metal Materials in the Water
    - There are pieces of exposed metal and other debris on the shoreline. These include large metal rods, poles, and bars; exposed rebar and discarded rusting metal are also visible at the north and south ends of the shoreline. This debris could pose a safety hazard for those accessing the swimming area.

Other Physical Hazards and Aesthetic Conditions

- Slopes into the Water Along the Shoreline
    - The shoreline of the park is generally inaccessible. The ground is uneven and steep in some areas. A high level of mobility and caution are required to enter the water.

- Frequent Litter on the Beach and Floating Debris
    - Various forms of litter and floating debris have been observed at Doug Fluhrer Park, including dog poop bags, sharp plastic objects, cigarette buds, and plastic bags.

- High Seaweed and Algae on the Shoreline
    - A significant amount of seaweed and algae is found along the shoreline of the swimming area. This could impact how slippery the shoreline and river floor is, which may lead to falling and other accidents.
    - Also, the high number of aquatic plants in the area could impact the clarity of the water for identifying a person in distress.

- Automobiles Near the Bathing Area
    - Parking lots are located directly across from the shoreline, less than 50 m away. A high number of vehicles have been observed in the parking lot, which could be a combination of the park visitors and Kingston Marina members.

- Boats and Watercrafts on and Near the Bathing Area
    - The site is next to the Kingston Marina and MetalCraft Marine Shipbuilding Yard. This results in a high volume of boats and watercraft in the area, and since there is no marker in the water to indicate the proximity of boats to the bathing area, this can become a hazard for swimmers.

Overall Risk from Physical Hazards:

- Debris and Litter on the Beach and in Swimming Areas: **HIGH**
    - The exposed metal poses a risk of injury and illness to water users who come into contact with it. The water's lack of clarity increases the potential for this debris to be concealed and injuries to occur.
    - The high amounts of litter in the zone of influence may also impact the rate of illnesses contracted by individuals entering the water. Also, the sharp plastic objects noted during site assessments can pose a threat of injury to the general public.
    - There is a significant amount of floating debris at Doug Fluhrer, which could further pose a risk of injury to swimmers. The lack of clarity from the water's general quality and natural appearance may also conceal debris on the subsurface, contributing to litter as a more significant safety hazard.

- Slopes into the Water Along the Shoreline: **HIGH**
    - As stated, the shoreline is generally inaccessible to the public due to several physical hazards, including slopes and uneven subsurface. This can adversely impact the general public's safety when entering the water from the shoreline.
    - The water's lack of clarity from natural sediment along the shoreline can further impact visitors' ability to enter the water safely.

    - In combination with the lack of additional safety equipment and measures posted in the area, the uneven terrain of the shoreline poses an increased risk to visitor safety.

- High Seaweed and Algae on the Shoreline: **MEDIUM**
    - High seaweed and algae content was observed along the shoreline, which could lead to injury due to slipping. This natural debris has also been noted to conceal other potential hazards, including dead animals, litter, uneven terrain, and live animals like snakes. The high volume of this natural debris throughout the site makes it of moderate risk to the average swimmer.

- Automobiles Near the Bathing Area: **LOW**
    - The proximity of vehicles to the bathing area does not appear to pose a significant risk to visitors, as of 2023 site assessment visits.

- Boats and Watercrafts on and Near the Bathing Area: **MEDIUM**
    - There are no indicators for boats and other large watercraft regarding the proximity they are allowed to be to the shoreline and swimming areas. This may result in injury to swimmers and other accidents. The Kingston Marina and MetalCraft Marine 100 - 200 m right of the primary beach area also increases the risk of visitor injury.

Facilities and Provisions:

Facilities:

Toilets: No public washrooms available at this site.

Showers: No public showers available at this site.

Drinking Water Fountains: No public drinking water fountains available at this site.

Litter Bins: Five

Recycling Bins: No recycling bins available at this site.

Access for Persons with Disabilities: There is an accessible, paved pathway throughout the park. However, the shoreline is not accessible as it consists of uneven and steep ground, with many rocks and other debris.

Safety Provisions:

Lifeguard Station: None on this site.

Life Saving Equipment: No equipment at this site.

Emergency Telephone: No

First Aid Station: No

Beach Postings/Suitability for Swimming: Yes, around the North bend of the Molly Brant Point.

Emergency Contact Information: Yes, indicates to call 911.

Other Information:

Reporting Mechanisms:

- Call the MOECC - Spills Action Centre
    - Public pollution reporting hotline - Toll-free: 1-866-MOETIPS (6638477). Available 24/7.
- City of Kingston: Spills and Environmental Incidents Reporting
    - 613-546-4291 ext. 1368 or 1249 (during normal operating hours)
- Swim Drink Fish - (416) 861-1237

Where to find the water quality results:

- Call Kingston Public Health: (613) 549-1232
- Swim Drink Fish - 416-861-1237

Contact Details for EHSS information:

- Taylor Villa (taylor@swimdrinkfish.ca)

Recommendations:

Assessment of the adequacy of facilities and safety provisions

The only safety provisions (safety ring and rope sign) are located on Molly Brant Point, around the bend north of the park. As well, Doug Fluhrer Park does not have any public nor accessible restrooms available to the public. Updated safety provisions and facilities are recommended. Furthermore, there is no marker in the water to indicate to boat operators how close they are able to get to the swimming area. An inclusion of this could reduce safety concerns for swimmers or paddle boarders in the water.

Evaluation of signs and other materials for public communication

Again, the only signage is located on Molly Brant Point, around the bend north of the park. Additional signage located directly in the park is warranted given the level of contamination of the site and that the shoreline can be accessed from within the park's boundaries.

Appendix:

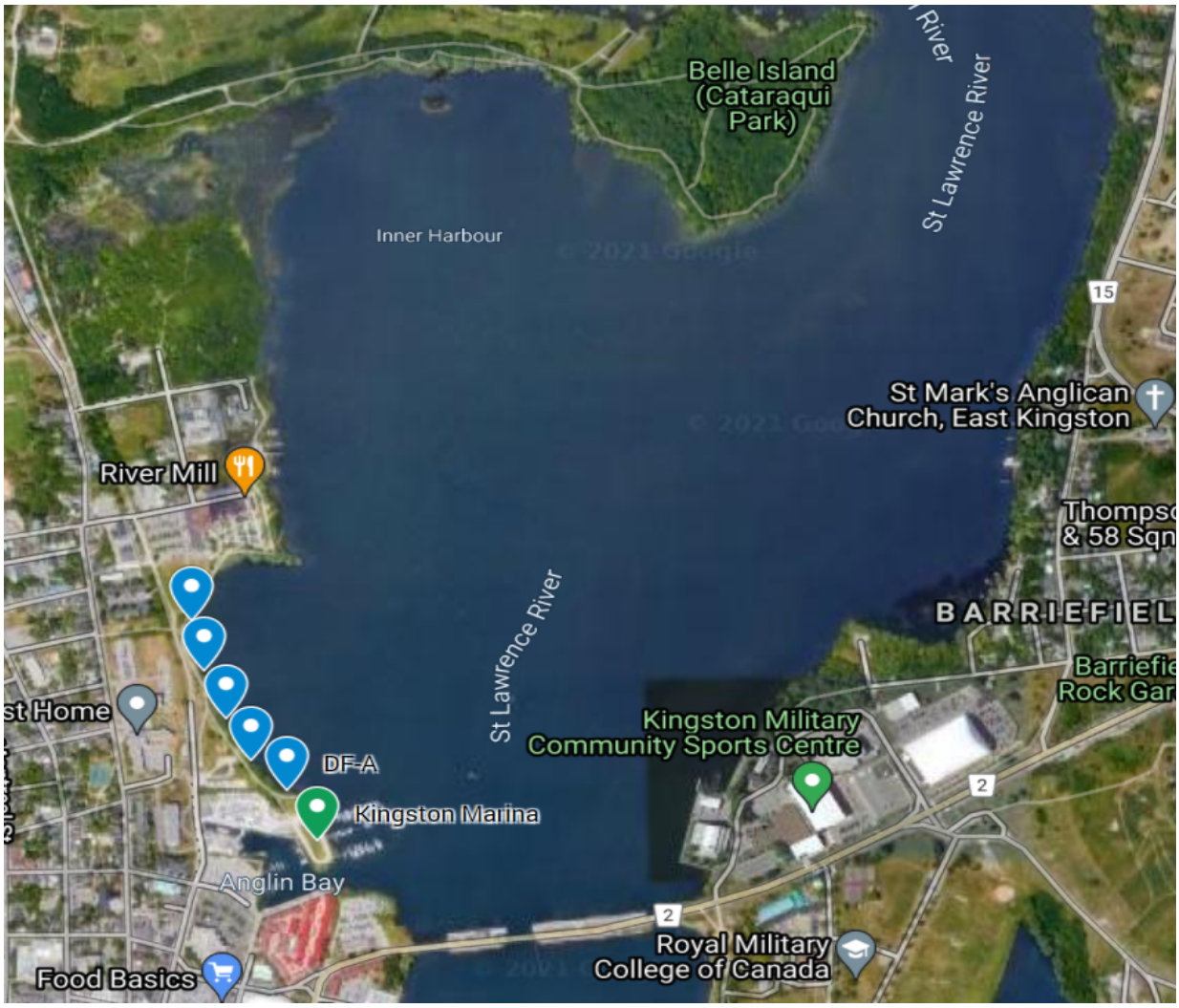

Figure 1 - Monitoring Points: Doug Fluhrer Park monitoring sites A to E (blue) and Kingston Marine (green), in Kingston's Inner Harbour.

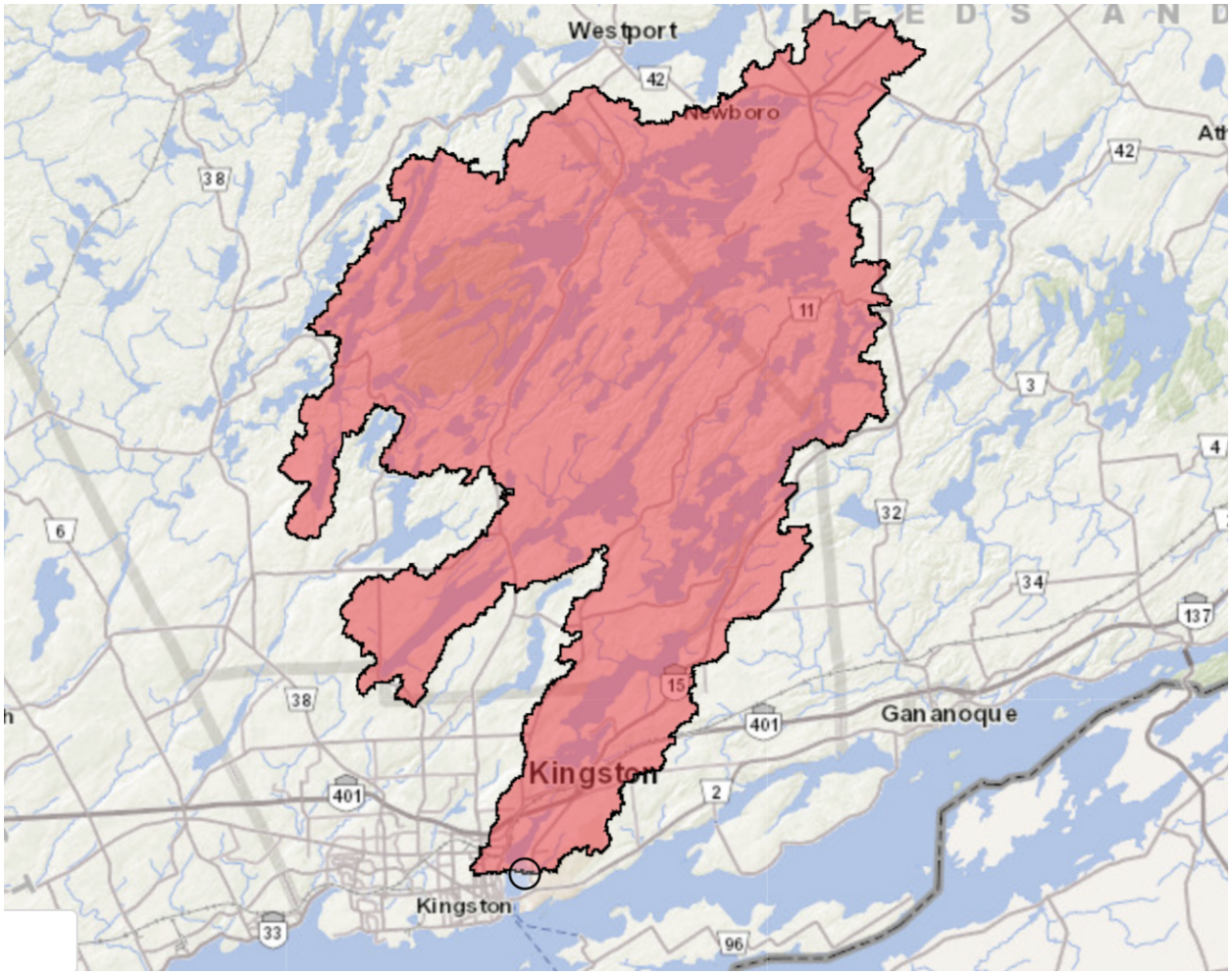

Figure 2 - Watershed for Doug Fluhrer Park

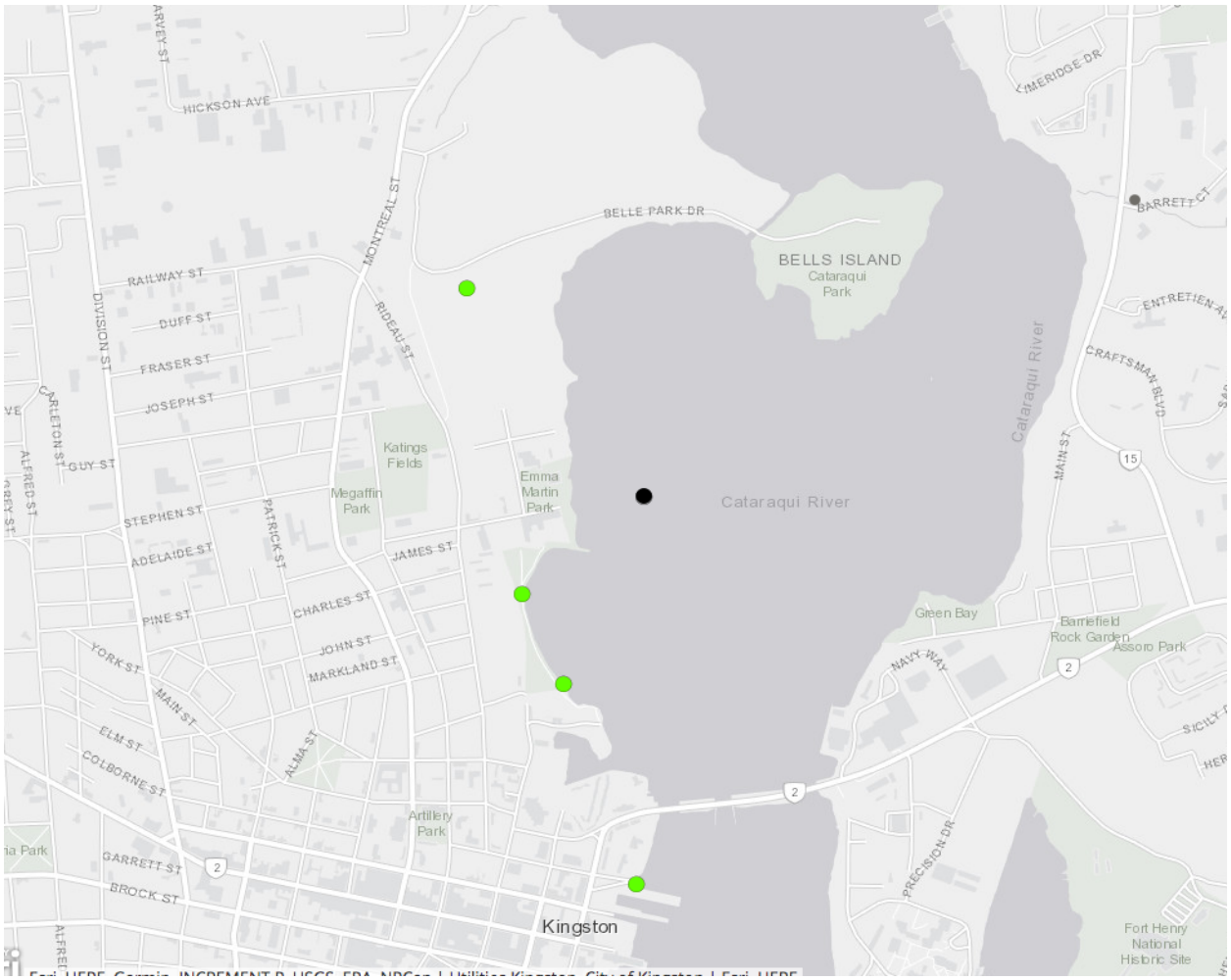

Figure 3 - Combined Sewer Outfalls: Five combined sewer outfalls (CSOs) in proximity to Doug Fluhrer Park (north to south): Belle Park, River St. Pump Station, Doug Fluhrer North, Doug Fluhrer South, and Barrack St. ferry ramp.

Date	Cause	Volume (m^3)	Precipitation (mm)
April 05, 2023	Heavy Rain on Snowmelt	27.0	24.6
December 23, 2023	Heavy Rain	5,142.2	54.0
November 11, 2022	Heavy Rain	29.2	46.1
September 26, 2022 - September 27, 2022	Heavy Rain	10.4	35.4
September 13, 2022	Heavy Rain	3.8	8.8
August 26, 2022	Thunderstorm	218.2	17.5

August 23, 2022	Heavy Rain	1.4	14.0
August 22, 2022	Heavy Rain	14.9	24.0

Table 1. Collection system sewage overflow events that occurred between August 2022 and April 2023 in the Kingston collection system and the corresponding amounts of precipitation.

Year	Events	Volume (m^3)	Precipitation (mm)
2022	14	6,795.3	360.7
2021	9	9,010.8	259.1
2020	18	65,701.1	443.1
2019	40	31,033.6	572.1
2018	26	84,373.3	666.0
2017	20	171,556.3	761.2
2016	14	120,226.9	371.1
2015	24	27,502	422.2
2014	26	106,731+	439.1
2013	17	132,573	280.1+
2012	12	120,786	276.0
2011	16	518,411	512.3
2010	26	209,643	399.0
2009	24	314,278	447.0
2008	41	626,588	N/A(2)
2007	31	85,431	350.0
2006	13	139,381(1)	340.3

Table 2. Collection system sewage overflows historical totals in the Kingston area (since Sept. 1, 2006). Last updated: 2023-06-05 12:39:09 PM Sewer overflow log.

Site Name	Site Status	Status	Contaminants
00023391 - Kingston Inner	Active	“Remedial action	Metal; metalloid and

Harbour Marsh		plan completed. Remediation/risk management underway.”	organometallic; PCBs (Polychlorinated Biphenyl) and PCDD/Fs (polychlorinated dibenzo p-dioxin/dibenzofuran)

Table 3: Site Name, Site Status, Status, and Contaminants found within Kingston’s Inner Harbour Marsh located within close proximity to Doug Fluhrer Park.

Months	Precipitation Total (mm)
June 1, 2023	0.8 mm
May 1, 2023	33.9 mm
April 1, 2023	103.5 mm
March 1, 2023	68.8 mm
February 1, 2023	47.1 mm
January 1, 2023	66.0 mm
December 1, 2022	90.0 mm
November 1, 2022	87.0 mm
October 1, 2022	43.1 mm
September 1, 2022	65.8 mm
August 1, 2022	93.0 mm
July 1, 2022	67.4 mm
June 1, 2022	136.6 mm

Table 4: Historic Data on the total precipitation levels for each month between June 1, 2022 and June 1, 2023 in Kingston, Ontario.