



# CHLORIDE MONITORING DATA SUMMARY REPORT FOR THE TIME LIMITED WATER QUALITY STANDARD FOR CHLORIDE – YEAR 2, MAY 2023-APRIL 2024

July 1, 2024

Prepared by the Chicago Area Waterways Chloride Workgroup and  
the Lower Des Plaines Watershed Group

## Introduction

Chloride harms aquatic life and vegetation and is corrosive to infrastructure. As the chloride concentrations increase and our waters become saltier, aquatic and plant biodiversity decrease and native species are overtaken by salt tolerant invasive species. It is cost prohibitive and very difficult to remove chloride through current treatment options available; whereas, proactive measures to reduce the amount of chloride discharged can help reduce the impacts from chloride on receiving waterways and the environment.

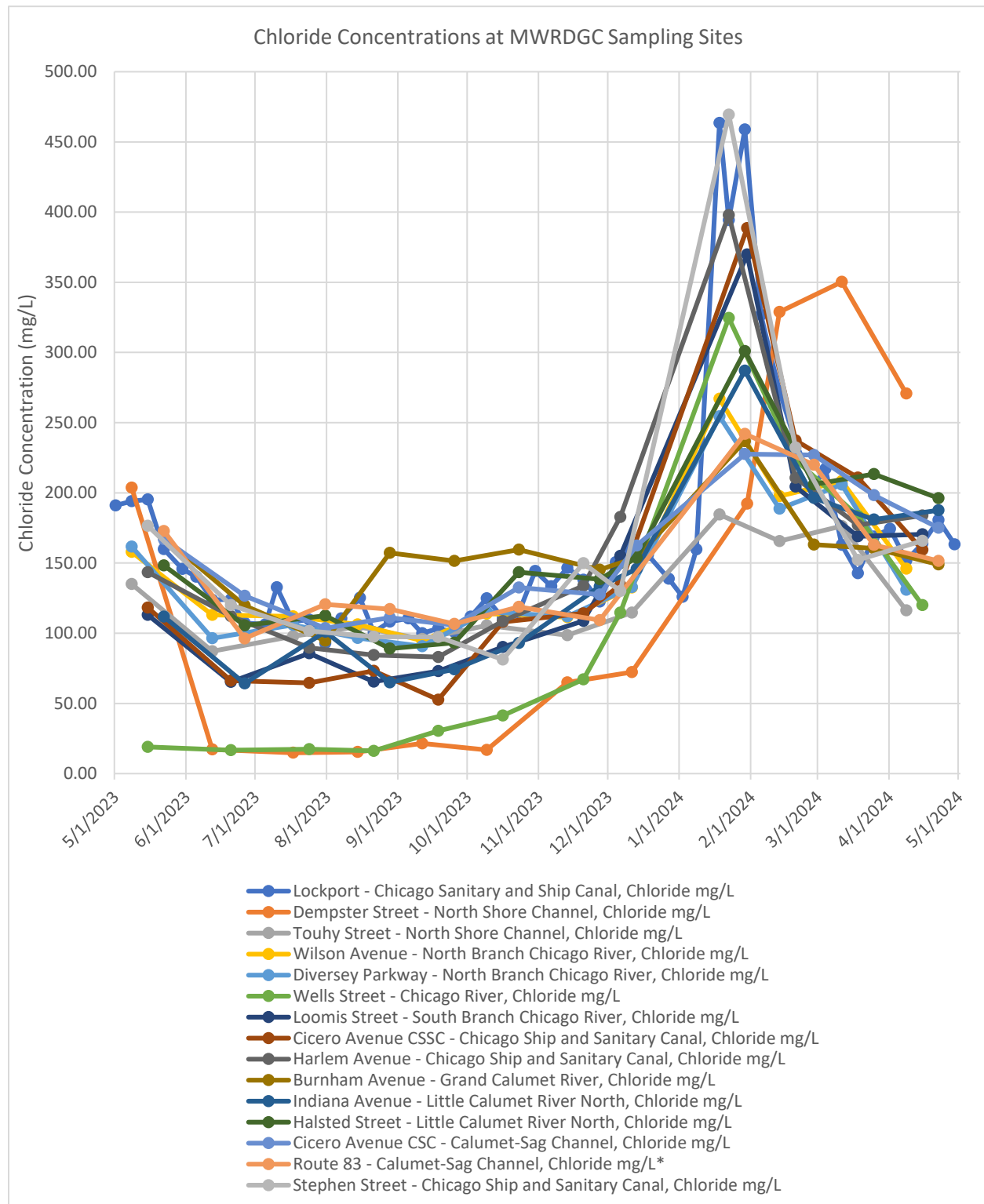
Chlorides are commonly found in road salt, fertilizers, water softeners, dust suppressants, and certain industrial processes. Chloride-based deicers, like rock salt, are used on parking lots, sidewalks, and roads to provide safe surfaces to the public during the winter months. These deicers are one of most common sources of chloride in the watershed.

As the Time Limited Water Quality Standard for Chloride (TLWQS) permittees make changes to their operations to reduce chlorides, various other factors may influence the chloride concentrations in the Chicago Area Waterway System (CAWS) and Lower Des Plaines River (LDPR) watersheds that are outside of the TLWQS permittees' control. Chloride concentrations can vary based on how much road salt and other deicing materials are used, but weather and precipitation variability across the watershed year to year also are an important factor. During mild winters, less salt may be needed to provide safe surfaces to the traveling public leading to lower chloride concentrations. Whereas, during more severe winters, more salt may be needed for the safe surfaces leading to higher chloride concentrations. Geographic variability in weather events also is a factor and will influence chloride concentrations. The precipitation amounts or types may not be equally reflected across the entire watershed and differing amounts of road salt may be needed to provide safe surfaces. Chloride concentrations can also be influenced by the flow and in years with more precipitation and higher flow, lower concentrations of chloride may be observed versus in years with less precipitation and lower flow, higher chloride concentrations may be observed. With various factors influencing the chloride concentrations in the entire watershed, both chloride concentration data and operational information from the permittees will be needed to evaluate the success of the TLWQS.

Presented below are graphs summarizing the chloride monitoring data collected by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) and the Lower Des Plaines Watershed Group (LDWG) for May 2023 through April 2024 to meet the requirements of the TLWQS. This data covers the second year of the TLWQS. The data collected is from both water quality monitoring and continuous specific conductivity monitoring. Specific conductivity is used to calculate estimated chloride concentrations based on a linear relationship. The raw data sets are available upon request.

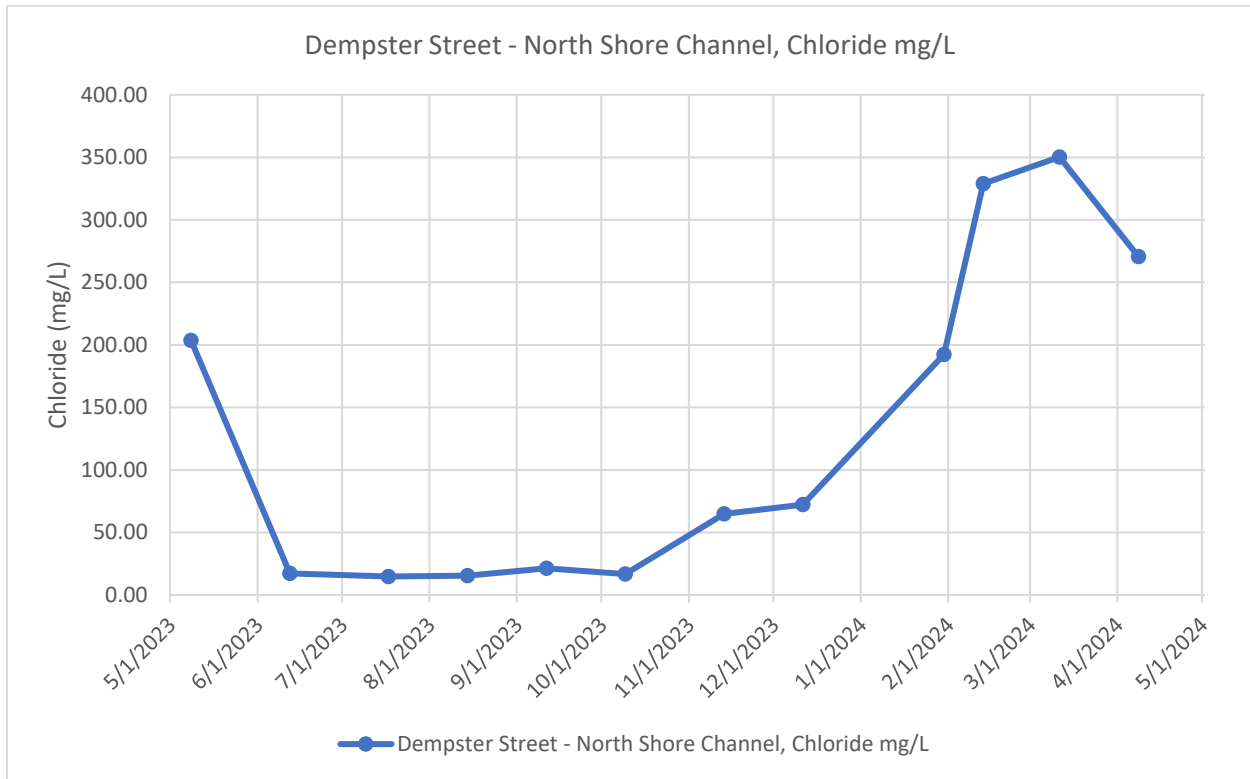
# Graphs for MWRDGC's Monthly and Weekly Sampling Sites

## All Sites

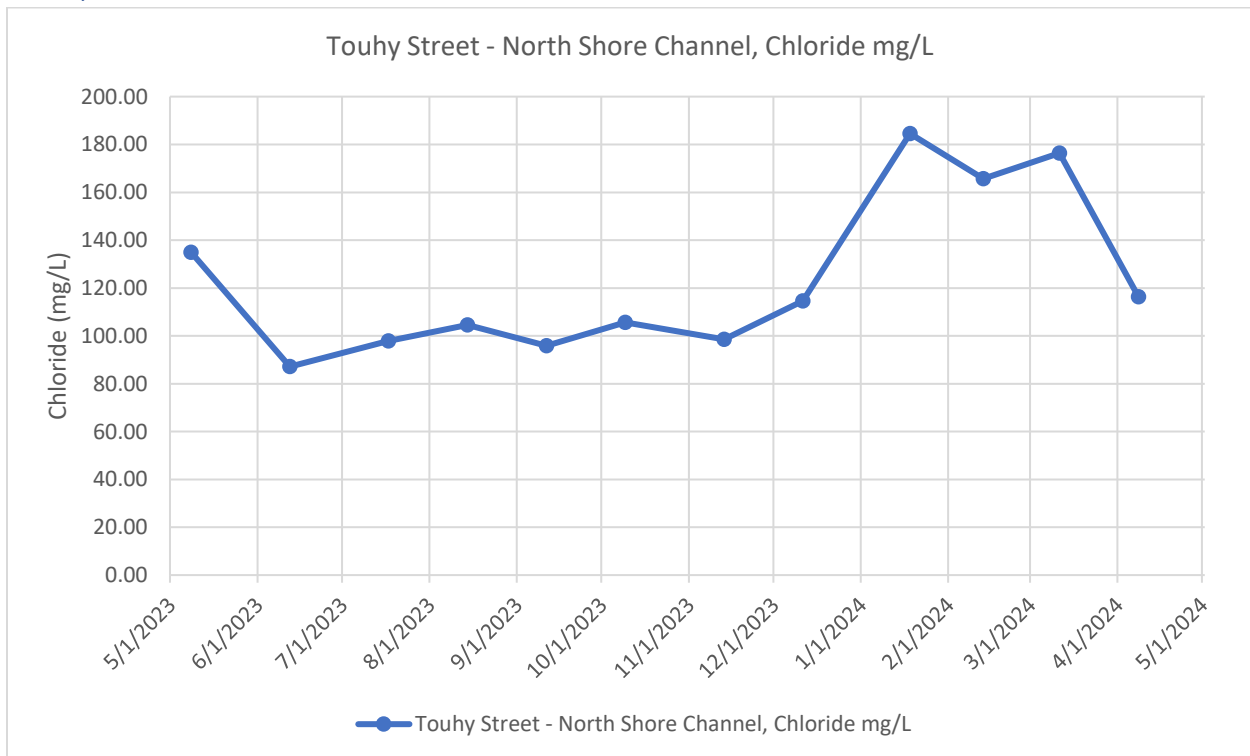


\*No data for Route 83 – Calumet-Sag Channel, Chloride (mg/L) on 12/13/2023

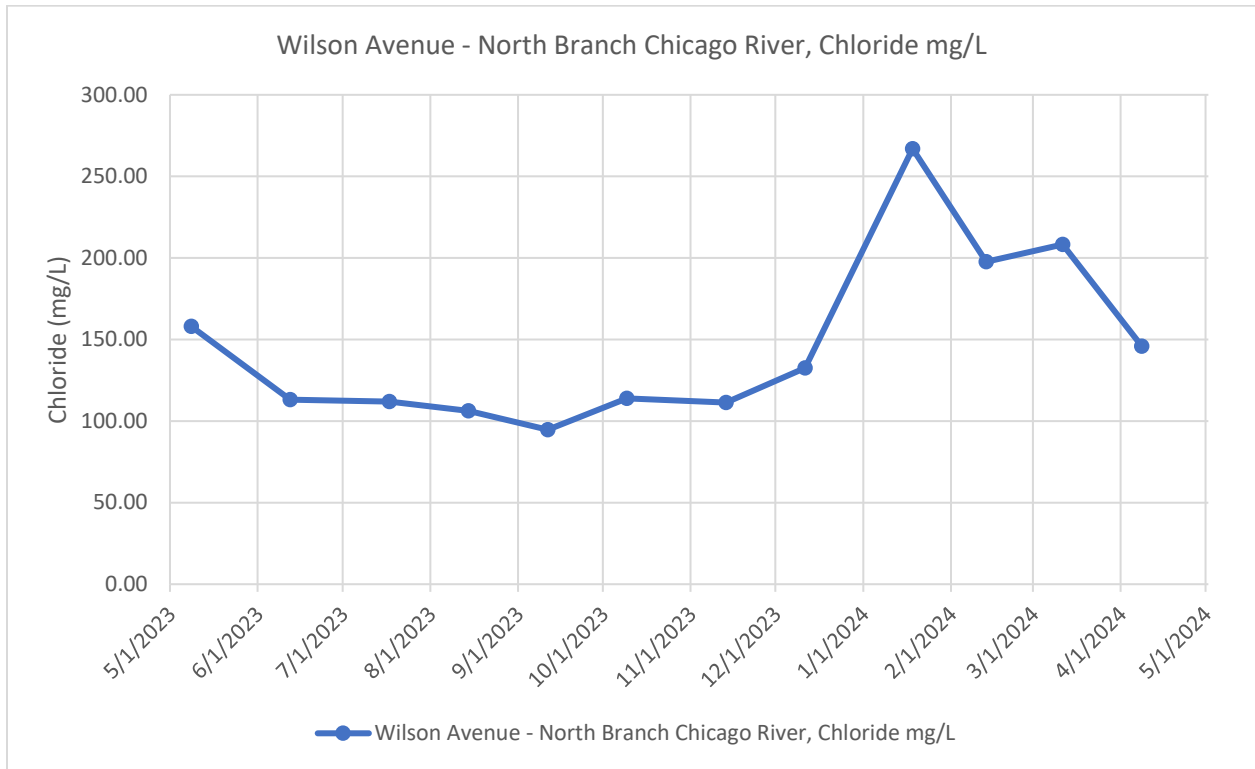
### Dempster Street, North Shore Channel



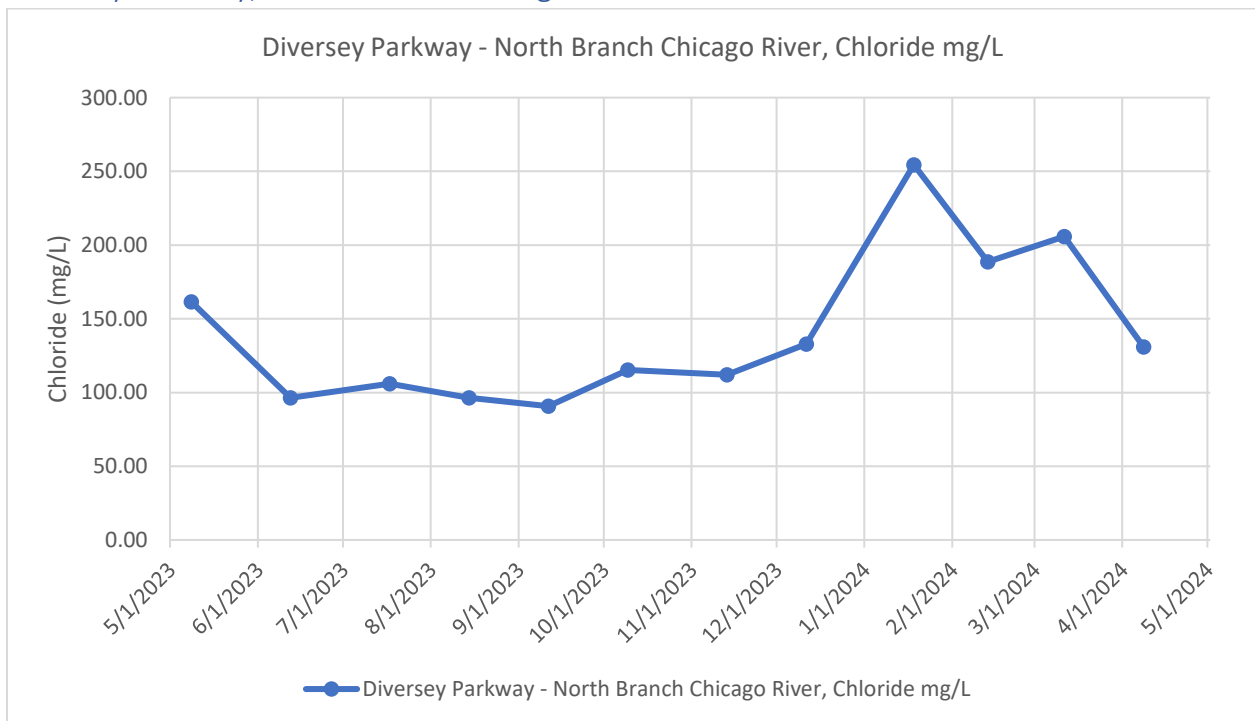
### Touhy Street, North Shore Channel



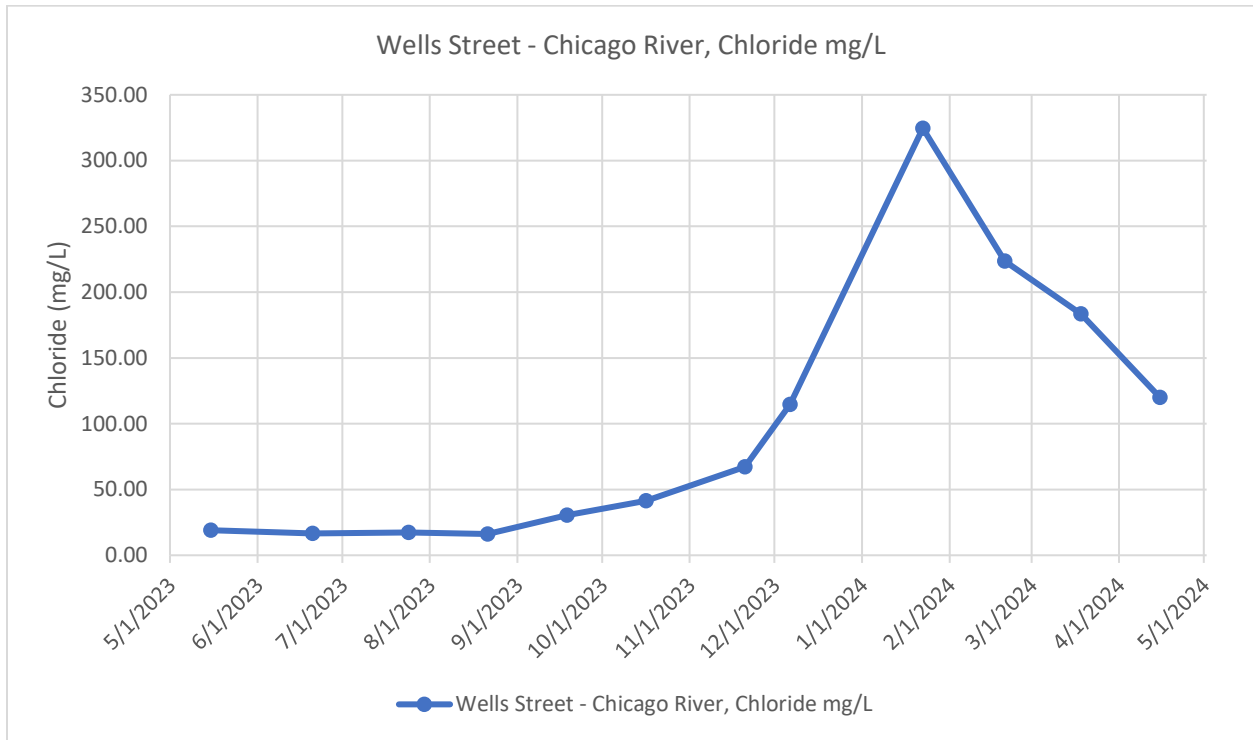
### Wilson Avenue, North Branch Chicago River



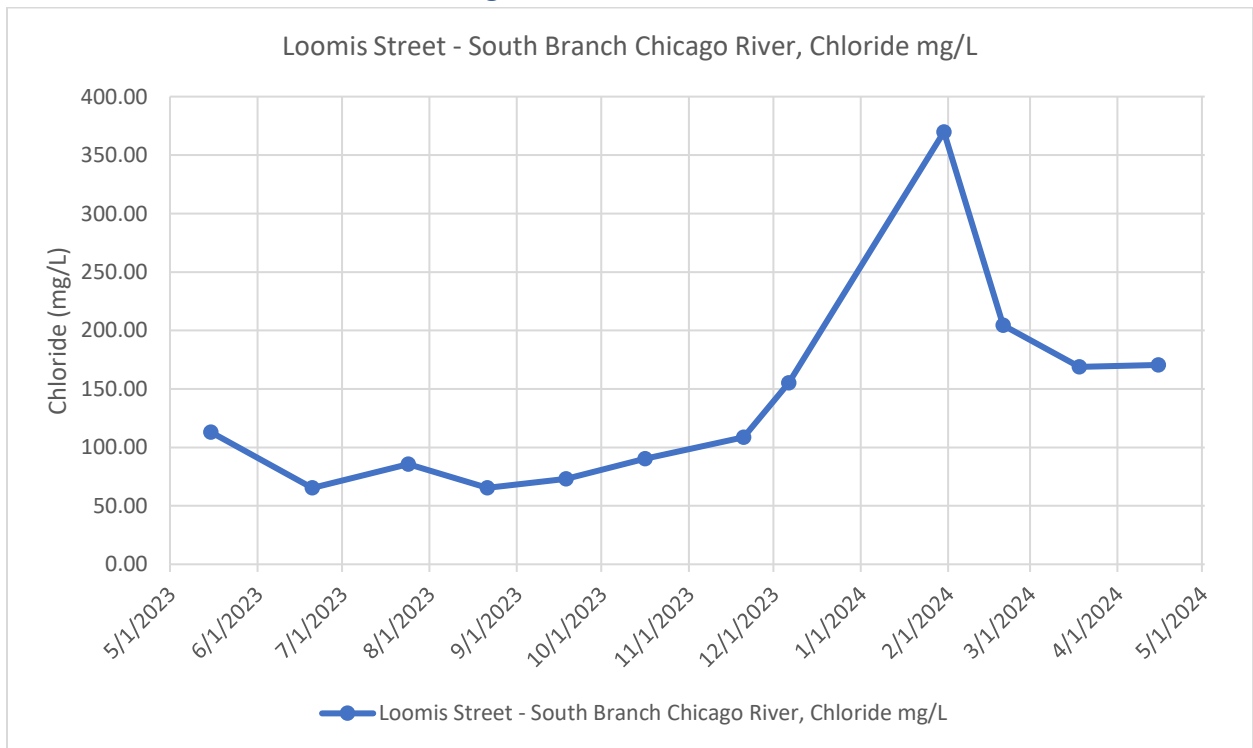
### Diversey Parkway, North Branch Chicago River



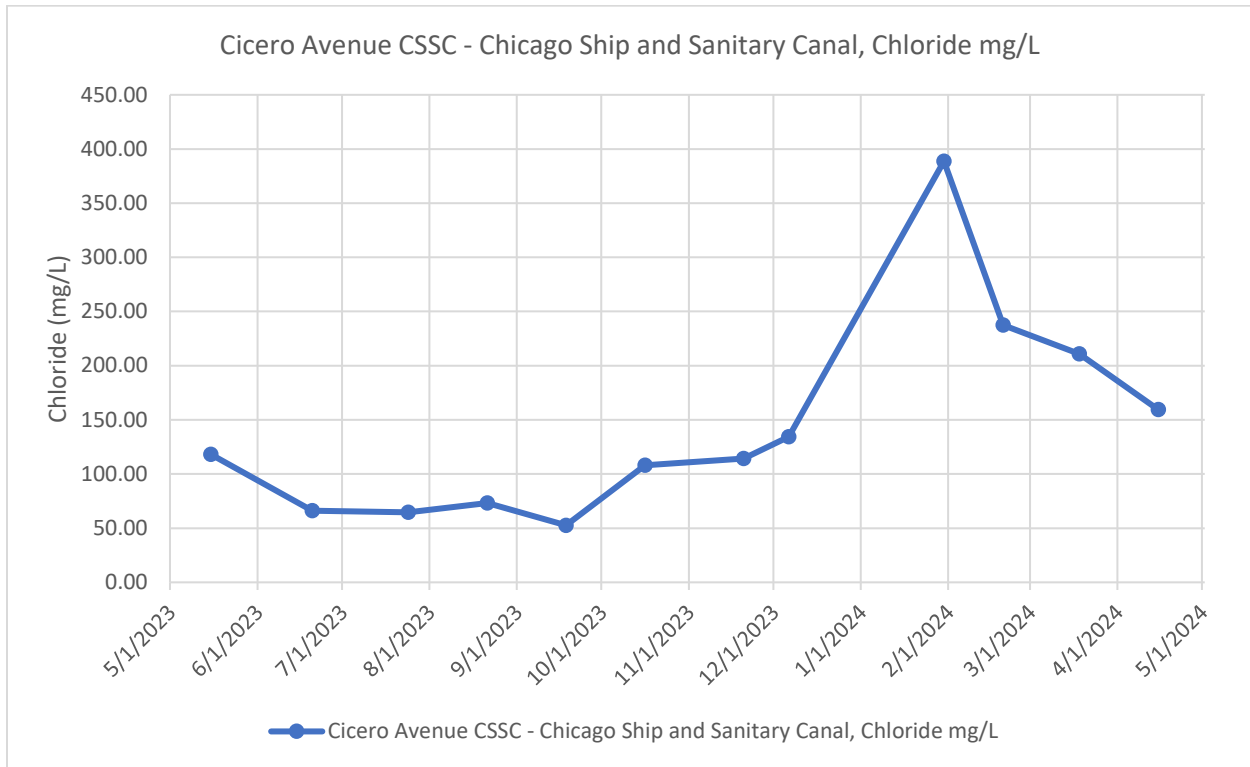
### Wells Street, Chicago River



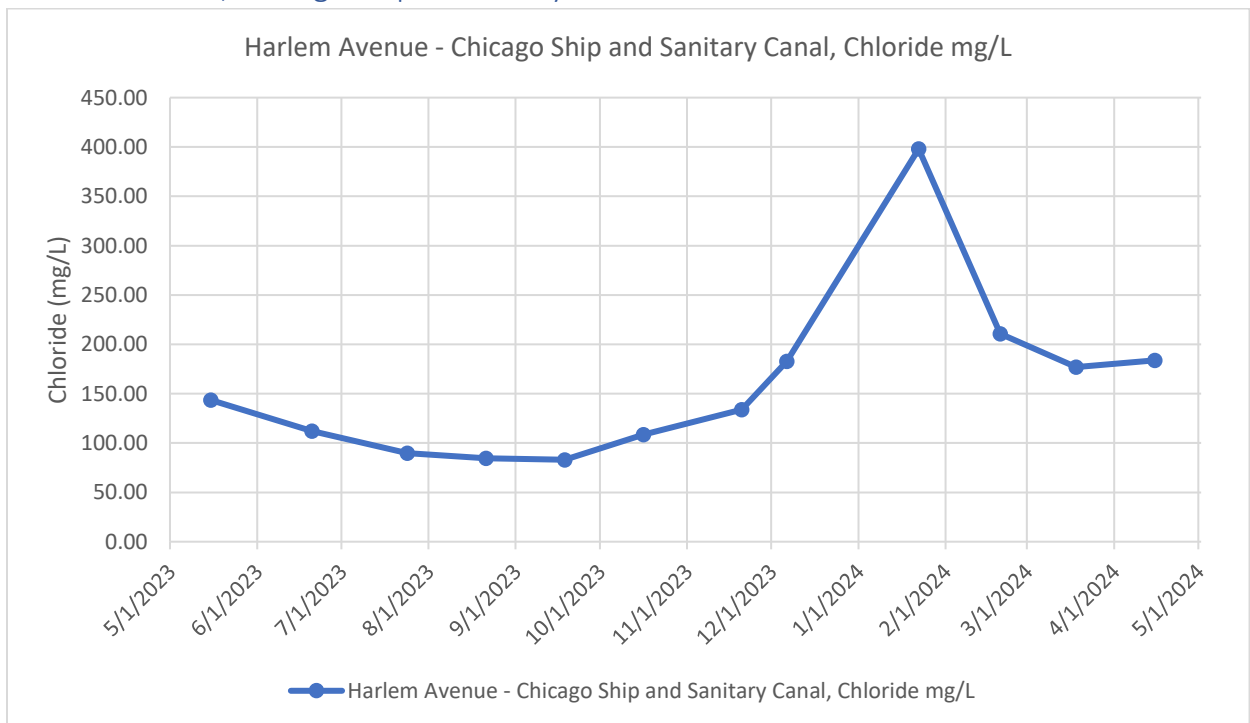
### Loomis Street, South Branch Chicago River



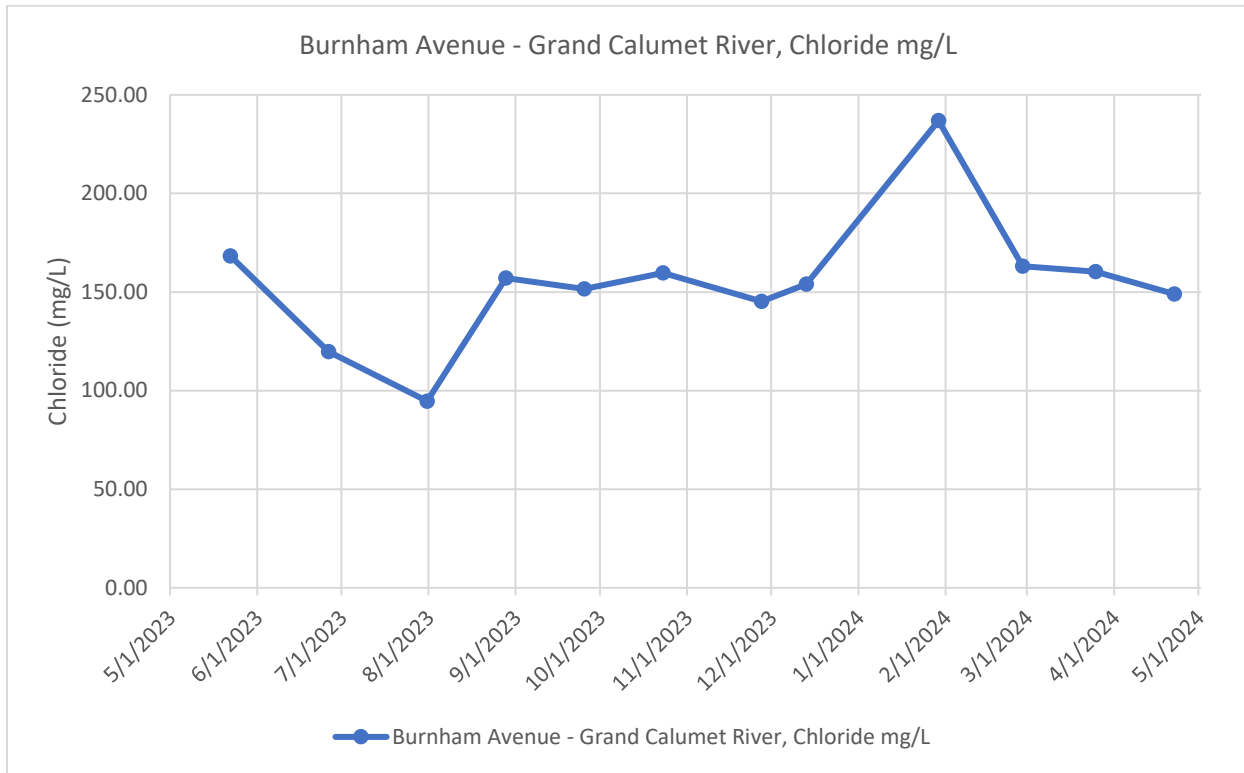
### Cicero Avenue, Chicago Ship & Sanitary Canal



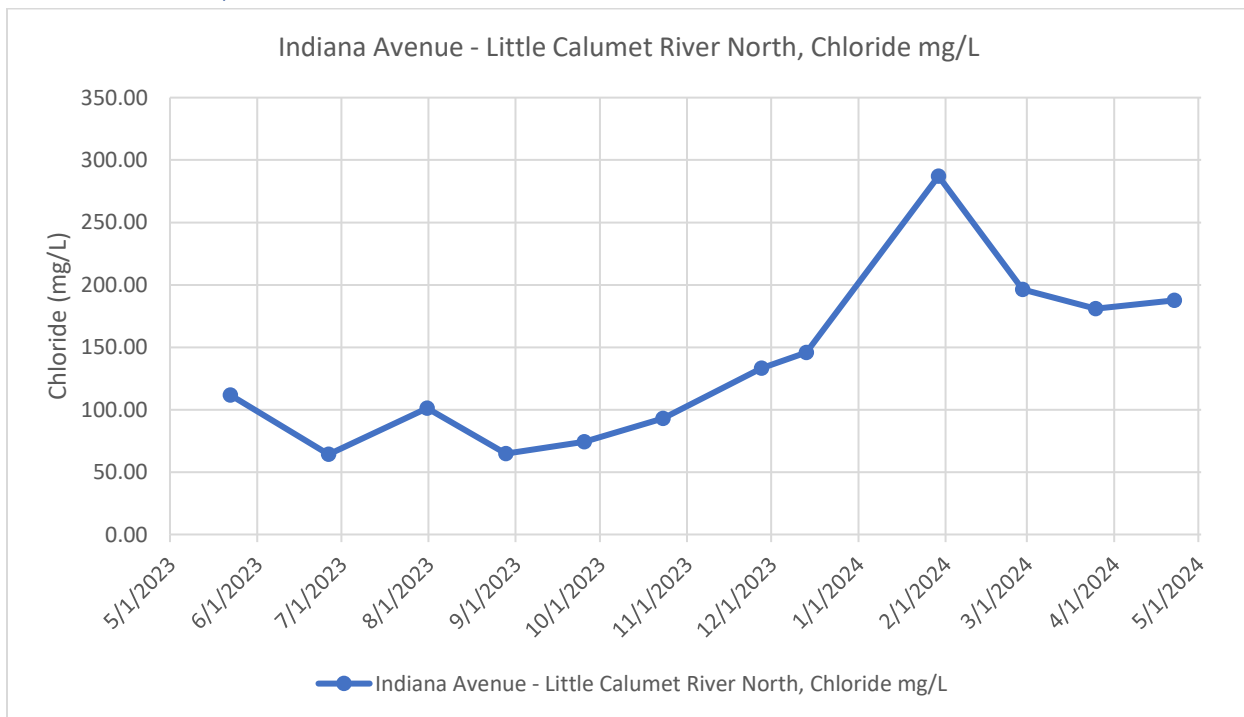
### Harlem Avenue, Chicago Ship & Sanitary Canal



### Burnham Avenue, Grand Calumet River

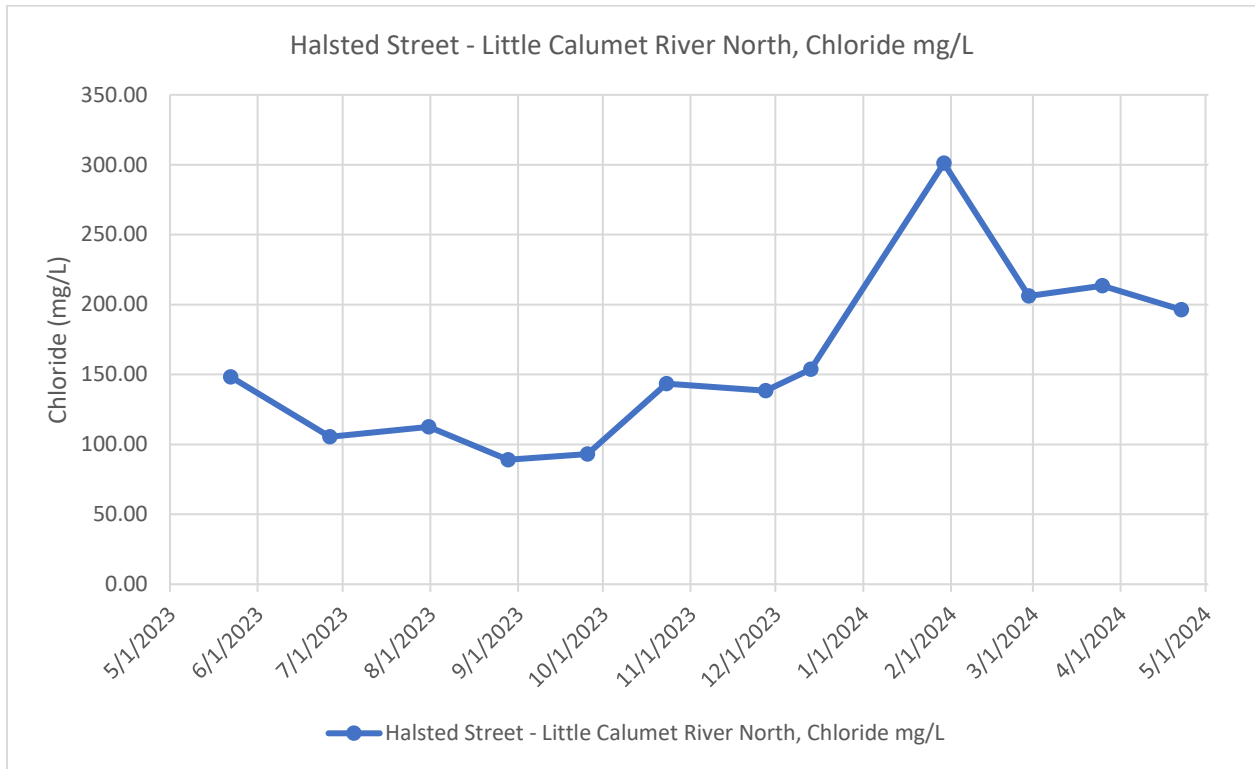


### Indiana Avenue, Little Calumet River North

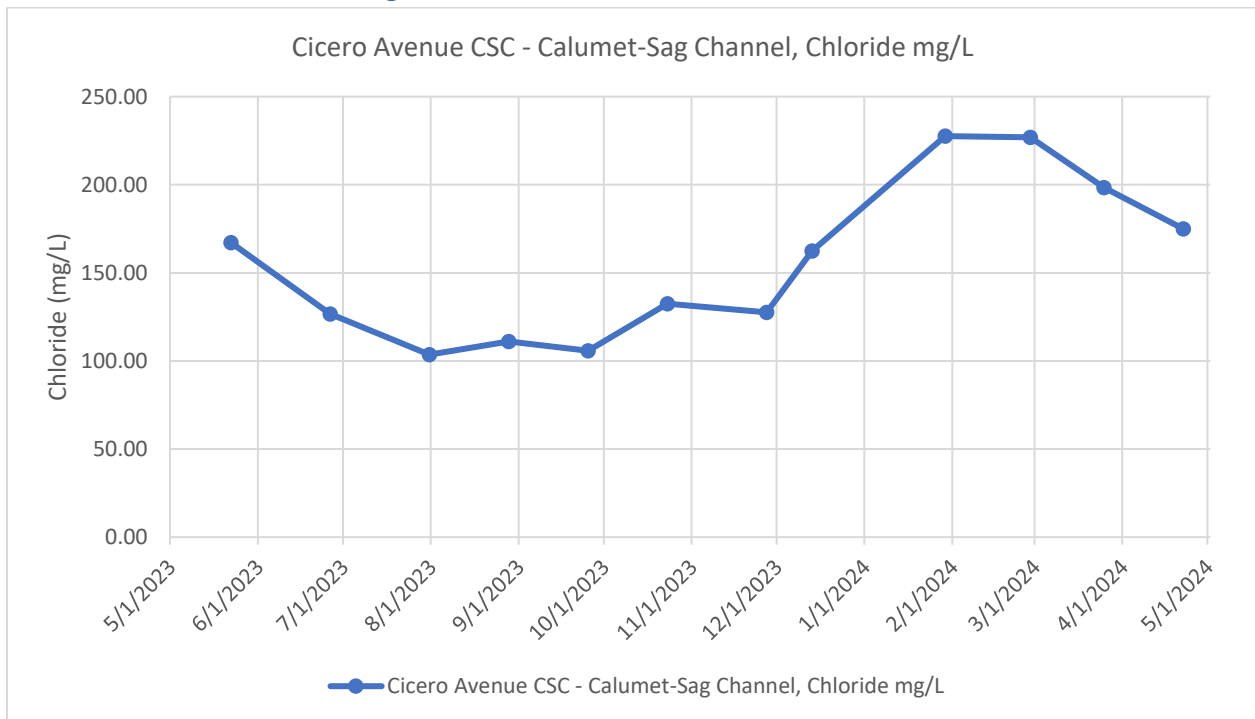




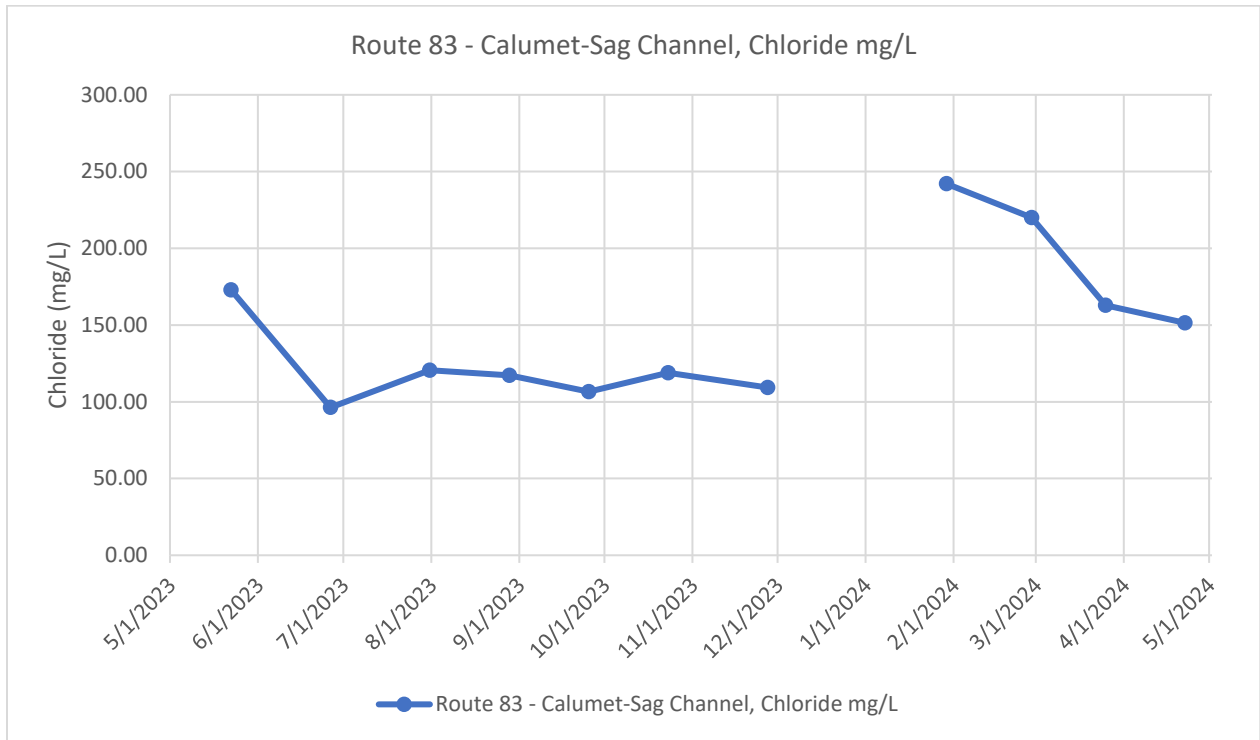
### Halsted Street, Little Calumet River North



### Cicero Avenue, Calumet-Sag Channel

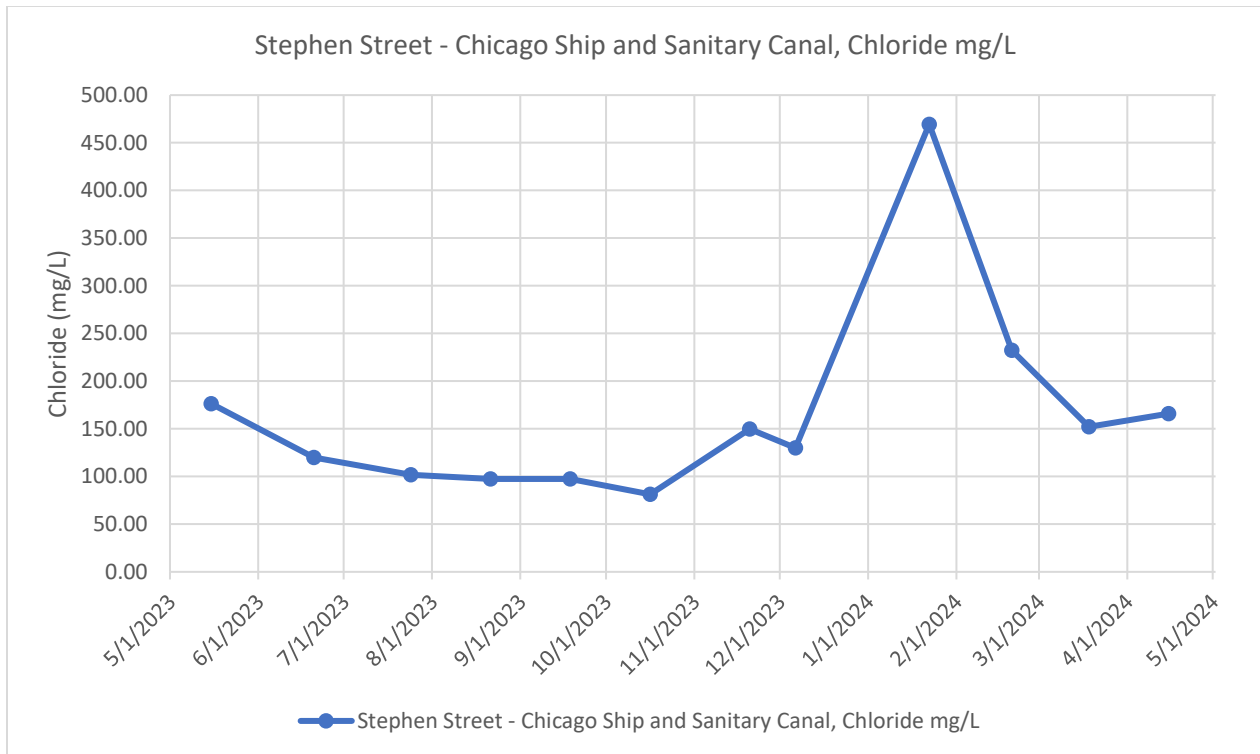


Route 83, Calumet-Sal Channel\*

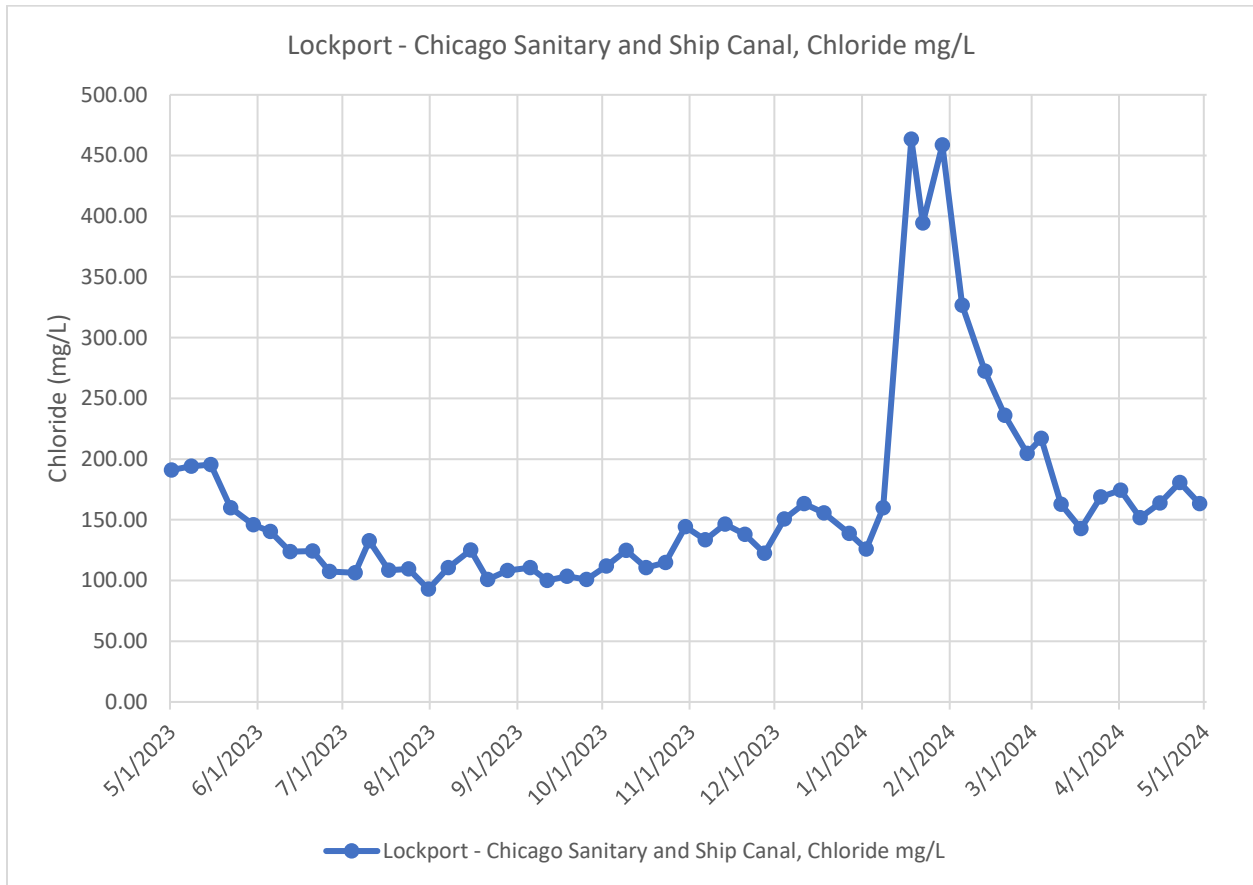


\*No data available for Route 83 – Calumet-Sag Channel, Chloride mg/L for 12/13/2023

Stephen Street, Chicago Ship & Sanitary Canal

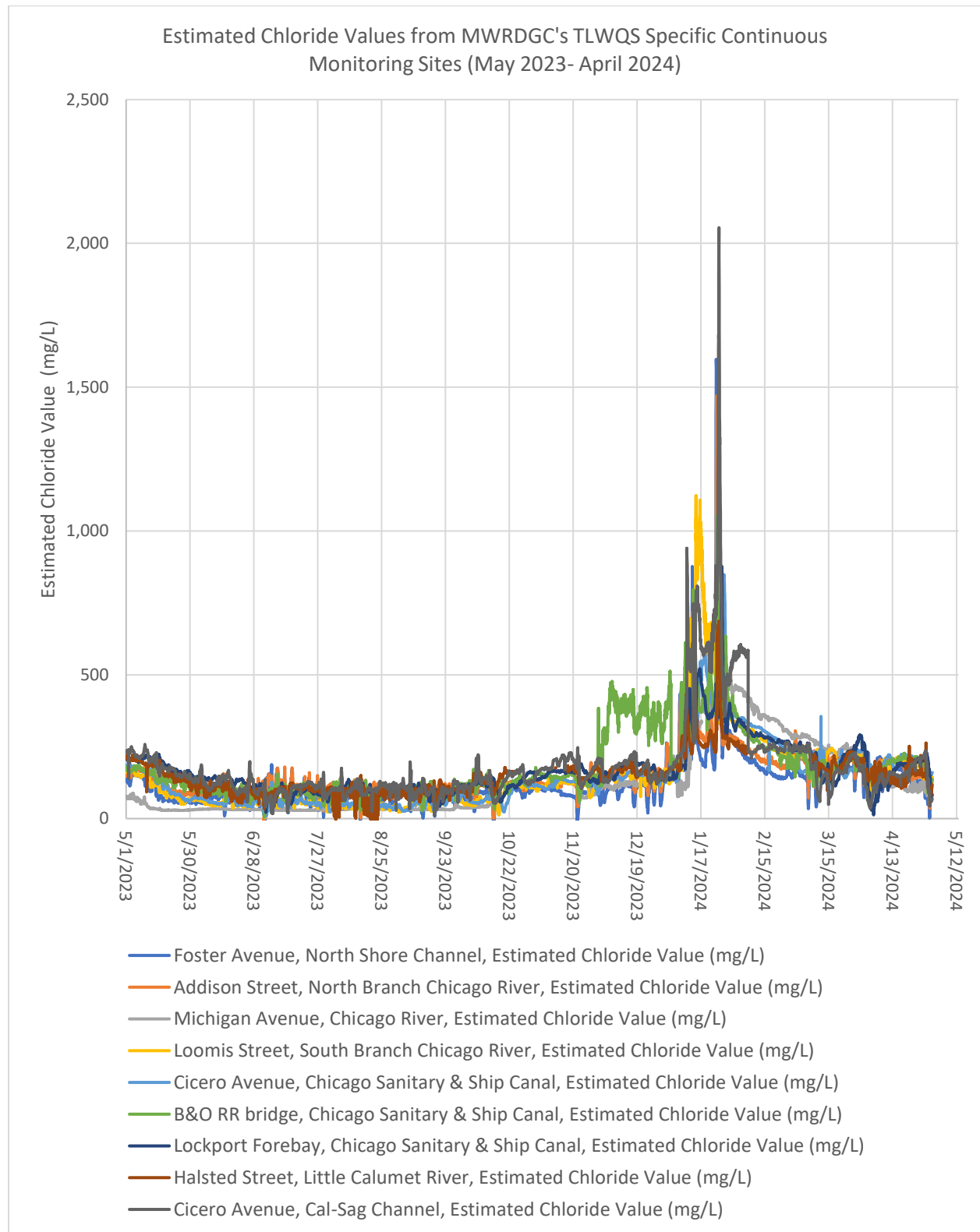


## Lockport, Chicago Ship & Sanitary Canal

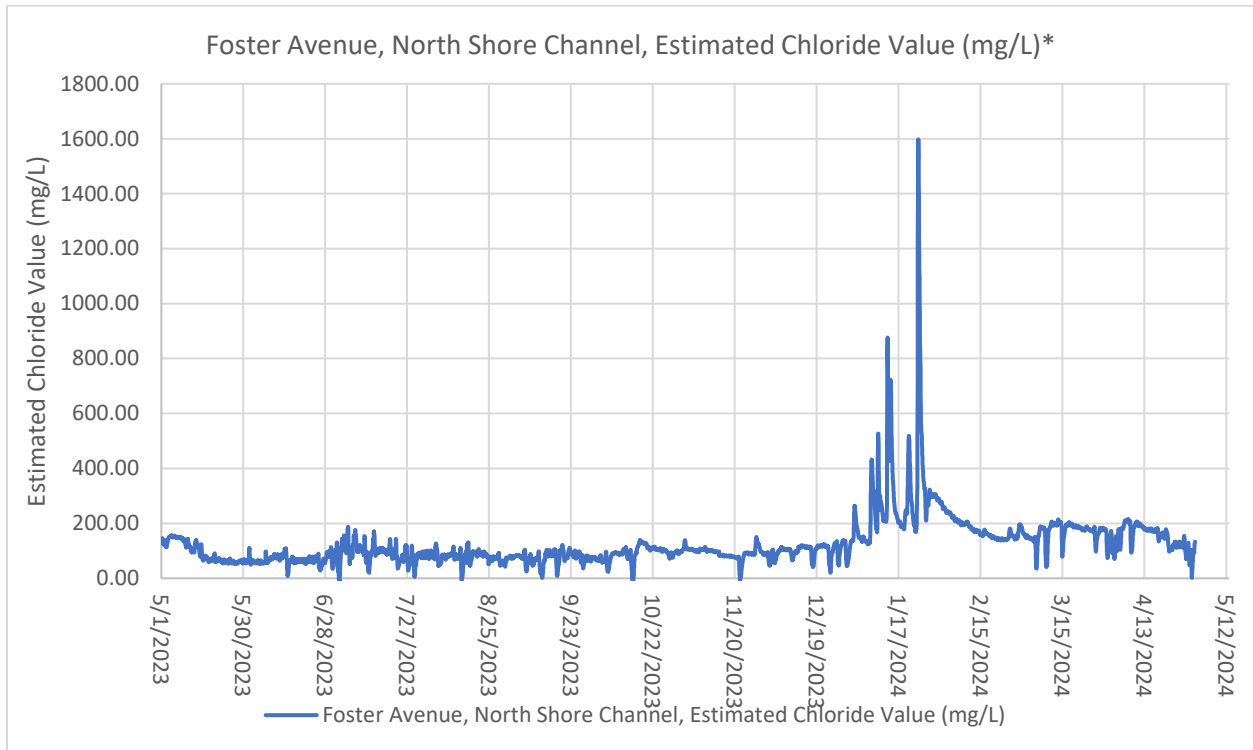


# Graphs for MWRDGC's Continuous Monitoring Sites

## All Sites

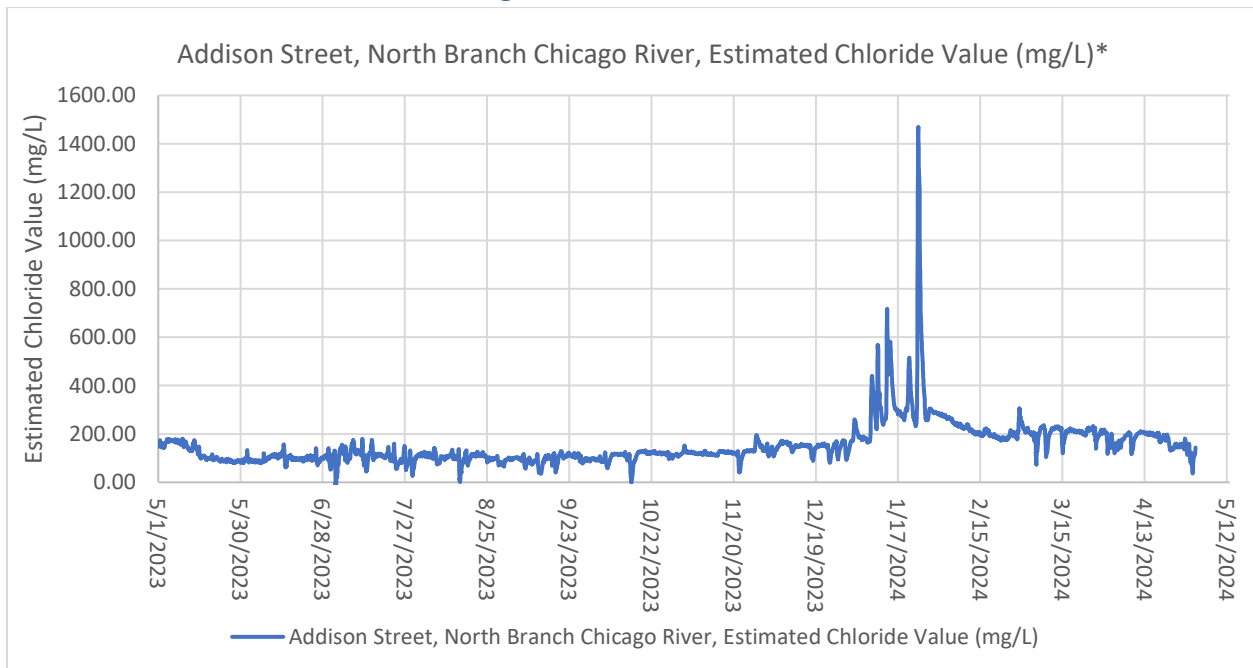


## Foster Avenue, North Shore Channel



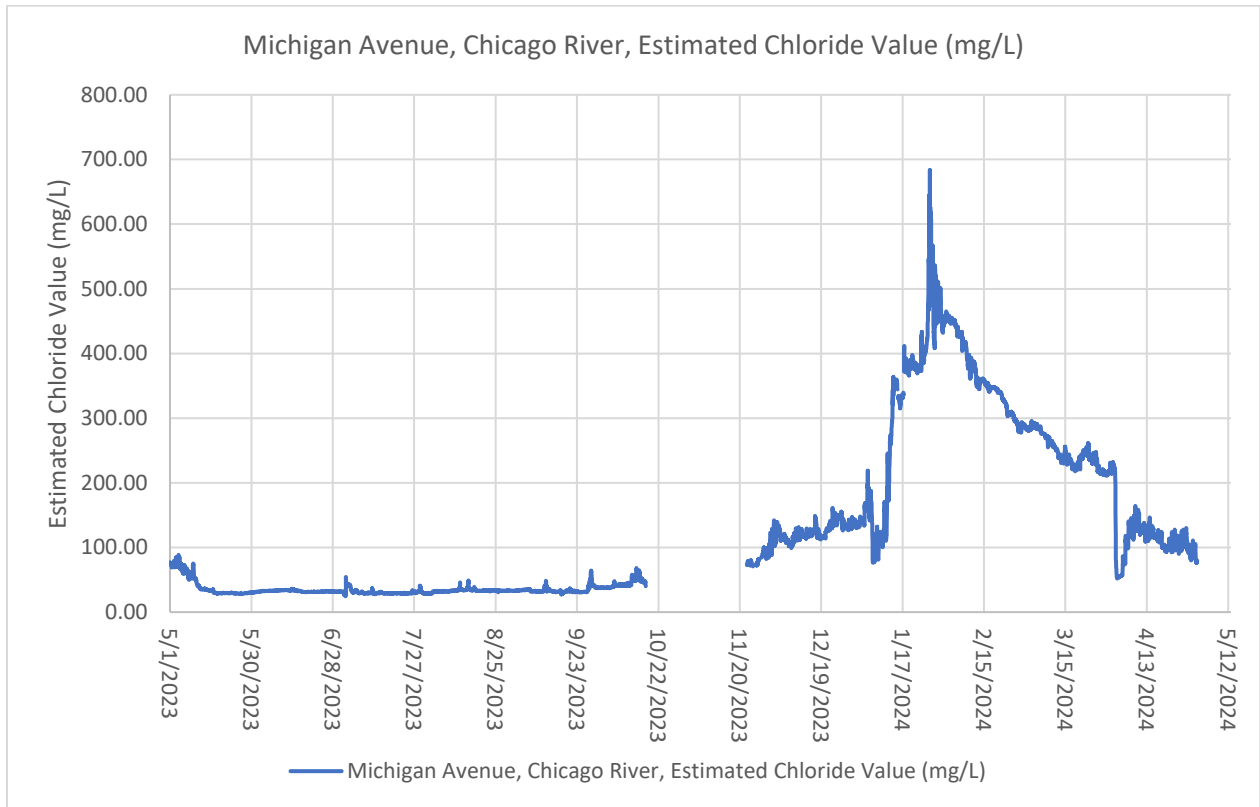
\*There were particularly low conductivity values in July that produced slightly negative chloride estimates. These are best represented as near zero.

## Addison Street, North Branch Chicago River

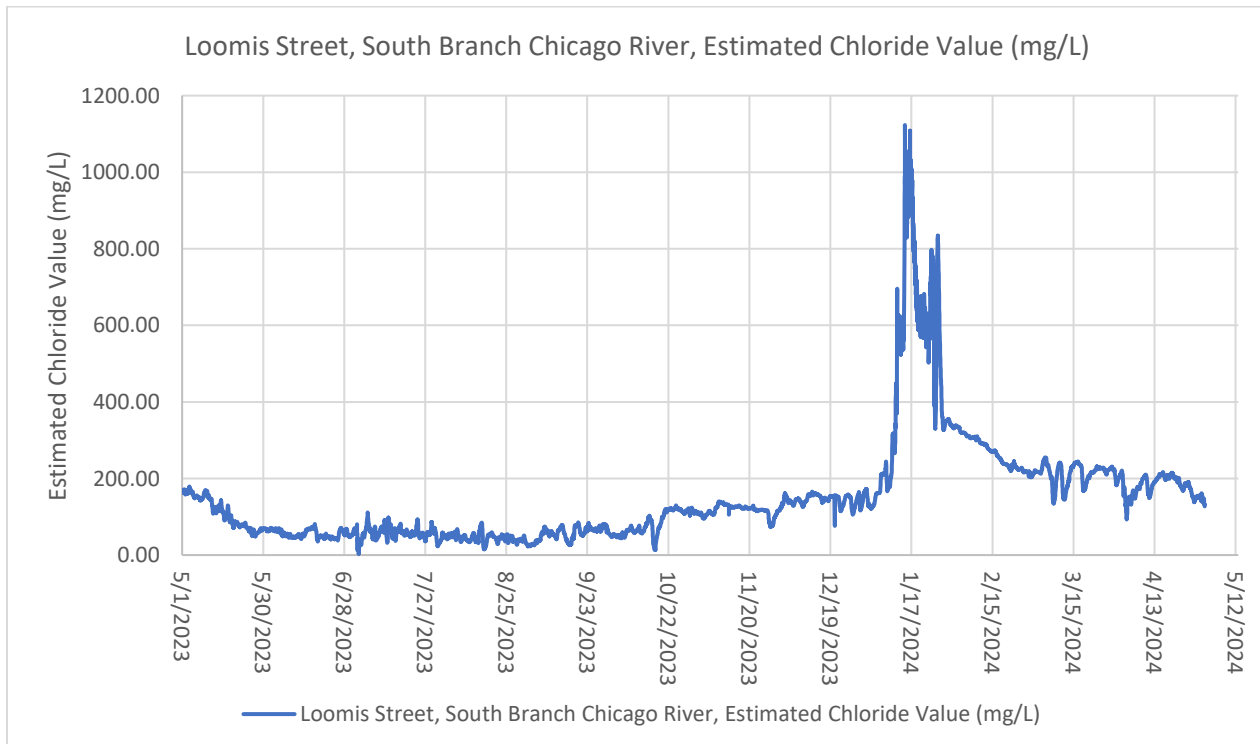


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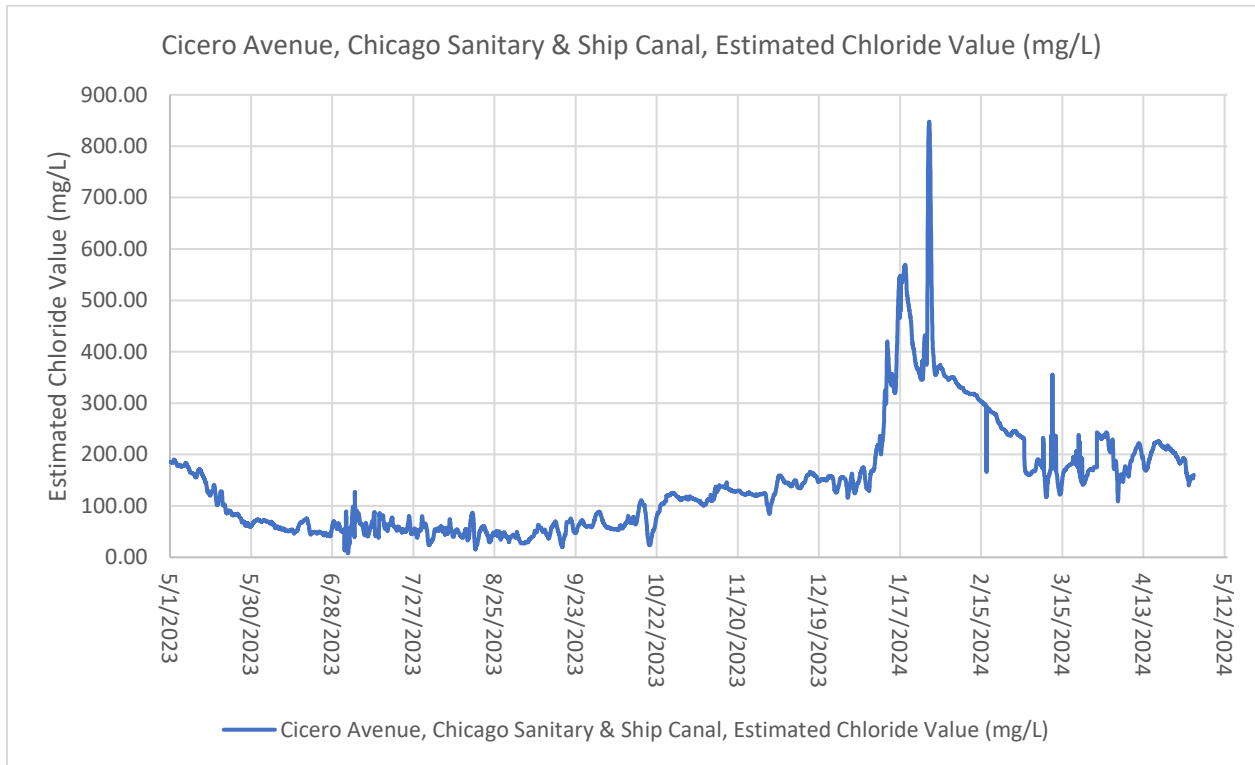
### Michigan Avenue, Chicago River



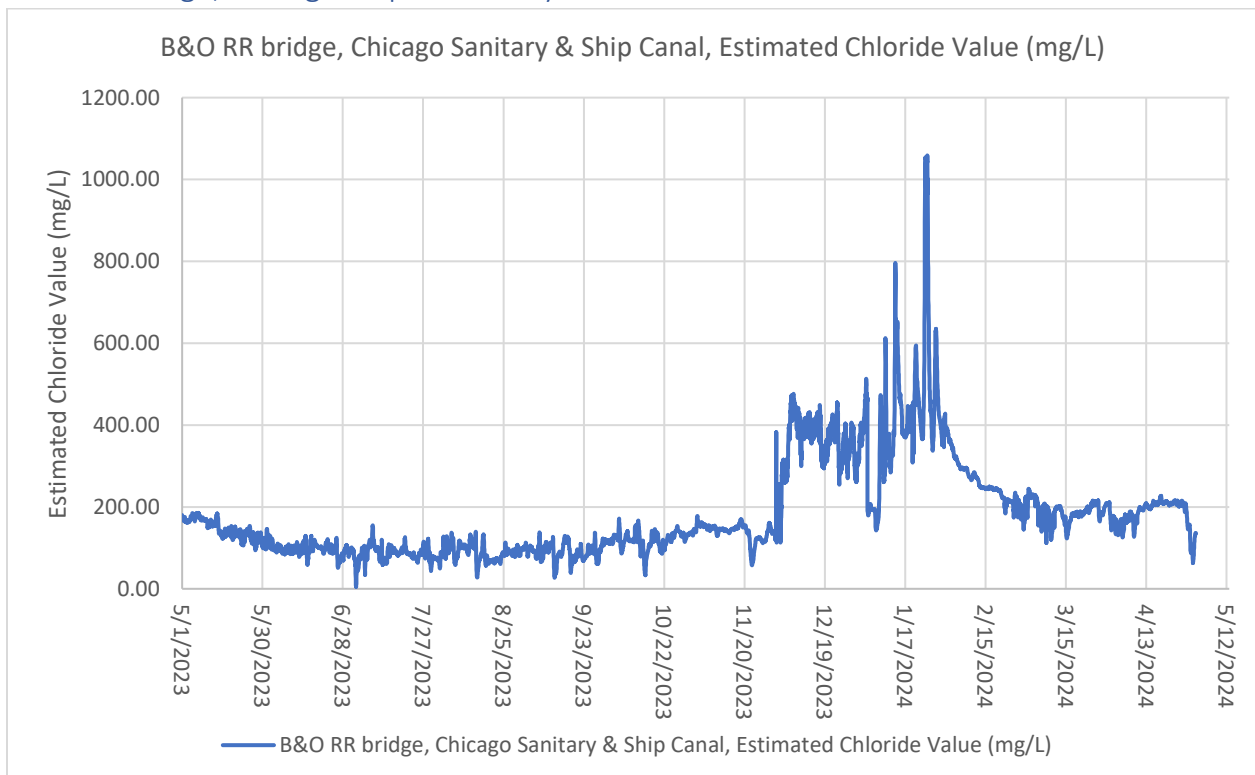
### Loomis Street, South Branch Chicago River



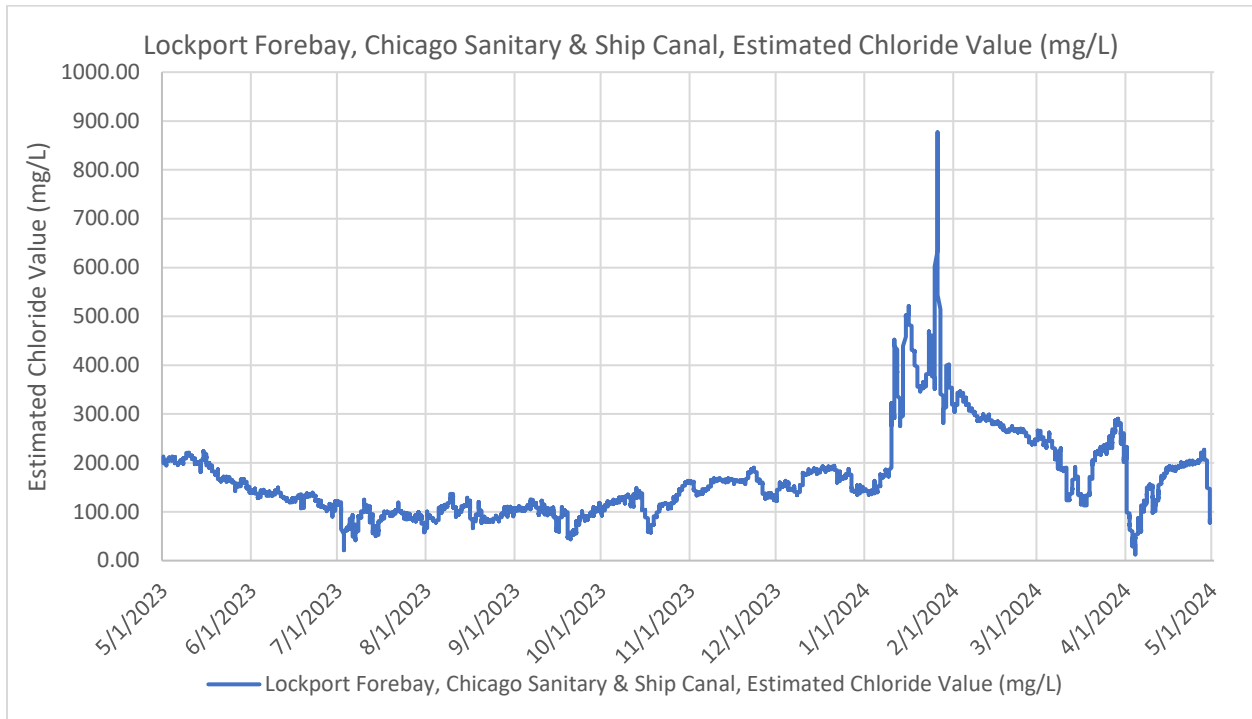
### Cicero Avenue, Chicago Ship & Sanitary Canal



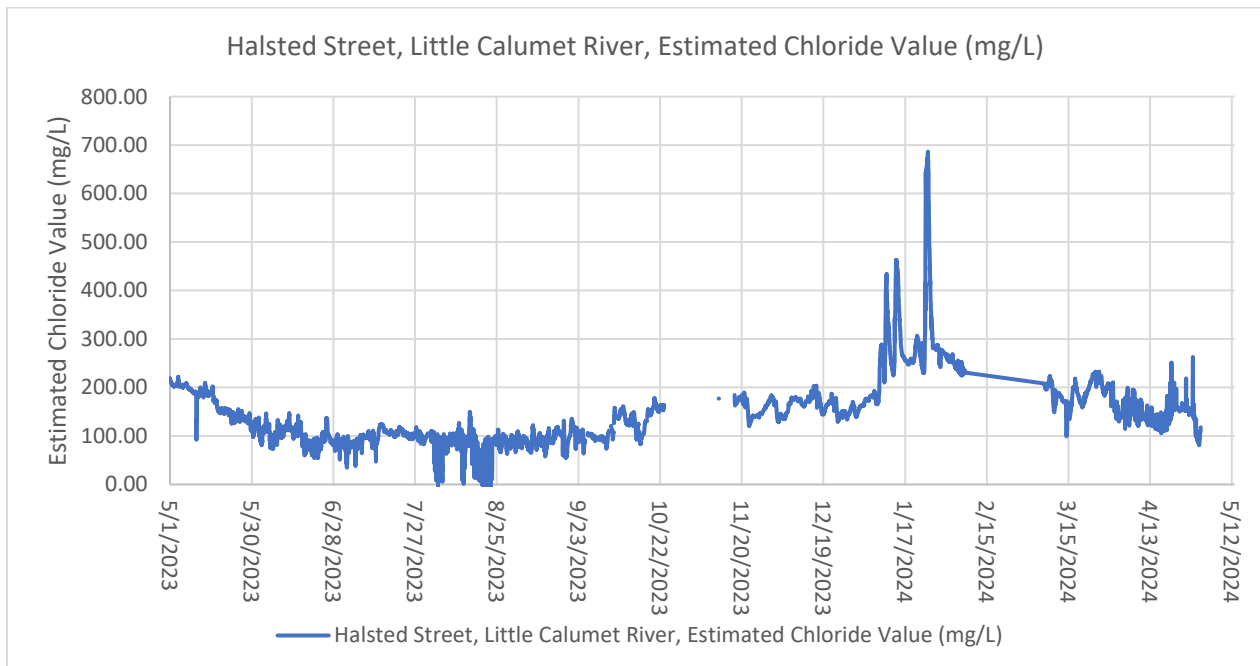
### B&O RR Bridge, Chicago Ship & Sanitary Canal



### Lockport Forebay, Chicago Ship & Sanitary Canal



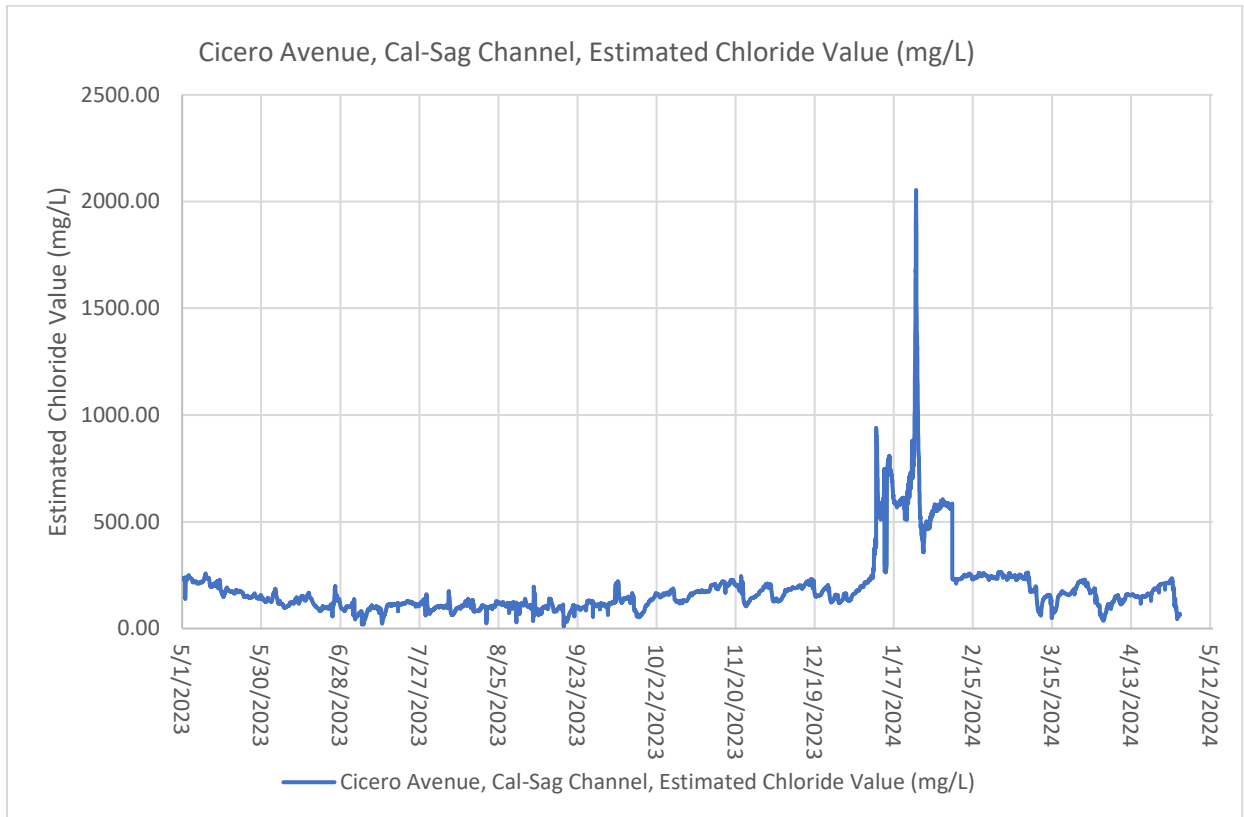
### Halsted Street, Little Calumet River



\*\*There were particularly low conductivity values in August that produced slightly negative chloride estimates. These are best represented as near zero.

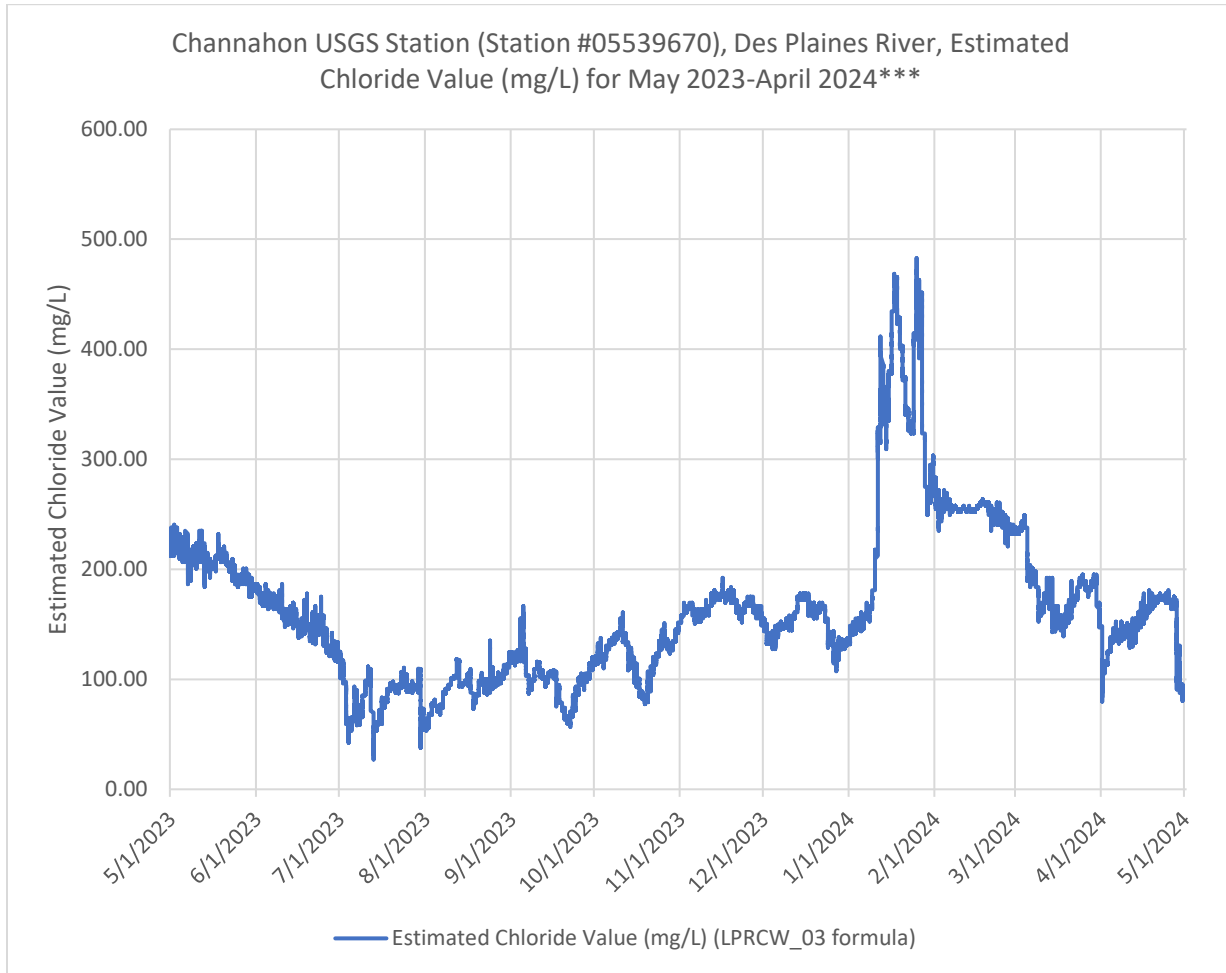


# Cicero Avenue, Cal-Sag Channel



## Graph for USGS Station at the Base of TLWQS Watershed

Lower Des Plaines River at Channahon, USGS Station, Continuous Monitoring



\*\*\*Data from 2/6/2024 14:30CST to 4/30/2024 22:45CST is considered provisional and is subject to revision following processing, review, and approval by the U.S. Geological Survey (USGS).