



GREAT LAKES NATIONAL PROGRAM OFFICE

CHICAGO, IL 60604

September 12, 2024

Joy Mulinex, Executive Director
Ohio Lake Erie Commission
P. O. Box 1049
Columbus, Ohio 43216

Dear Ms. Mulinex:

Thank you for your August 15, 2024 request to remove the *Beach Closings* Beneficial Use Impairment (BUI) at the Cuyahoga River Area of Concern (AOC). As you know, we share your desire to restore all the Great Lakes AOCs and to formally delist them.

Based upon a review of your submittal and supporting data, the U.S. Environmental Protection Agency (EPA) hereby approves your request to remove this BUI from the Cuyahoga River AOC. EPA will notify the International Joint Commission of this significant positive environmental change at this AOC.

We congratulate you and your staff as well as the many federal, state, and local partners who have been instrumental in achieving this environmental improvement. Removal of this BUI will benefit not only the people who live and work in the AOC, but all the residents of Ohio and the Great Lakes basin as well.

We look forward to the continuation of this productive relationship with your agency, the Ohio Environmental Protection Agency, and the Cuyahoga River AOC Community Advisory Committee as we work together to delist this AOC in the years to come. If you have any further questions, please contact me at (312) 886-0124 or your staff can contact Leah Medley at (312) 886-1307.

Sincerely,

Teresa Seidel, Director
Great Lakes National Program Office

cc: Mark Johnson, OEPA
Kristina Patterson, OLEC
Hannah Boesinger, OLEC
Raj Bejankiwar, IJC

Removal Recommendation for the Beach Closings (Recreational Use) Beneficial Use Impairment in the Cuyahoga River AOC



August 2024



Environmental
Protection
Agency

Lake Erie
Commission



Contents

Purpose.....	3
Background	3
BUI Listing Criteria and Impairment Listing for Beach Closings	5
State of Ohio Restoration Target and Removal Criteria	10
Data Sources.....	11
Public Bathing Beach Closings Evaluation.....	12
Paddling Streams Evaluation	14
Euclid and Villa Angela Beach Bacterial Source Documentation.....	16
Paddling Streams Bacterial Source Documentation	18
Remedial Actions.....	19
Conclusion.....	22
Recommendation.....	24
References	25

Appendices

Appendix A - 2020 BUI Restoration Target	27
Appendix B – 2019-2023 Ohio Lake Erie Central Basin Beach Advisories and Seasonal Geomeans.....	31
Appendix C – Cuyahoga River, Tinkers Creek, and Rocky River <i>E. coli</i> Concentrations.....	34
Appendix D – Public Comment	57
Appendix E – Letter of Support Cuyahoga River AOC Community Advisory Committee	58

Tables

Table 1. Cuyahoga River AOC beaches contact advisories due to bacterial contamination	12
Table 2. Cuyahoga River AOC beaches contact advisories due to algal toxins.....	14

Figures

Figure 1. Cuyahoga River AOC.....	4
Figure 2. Edgewater Beach	5
Figure 3. Map of Euclid and Villa Angela beaches	6
Figure 4. Cuyahoga River AOC beaches and paddling streams.....	7
Figure 5. Euclid and Villa Angela beaches percent recreation season under advisory	13
Figure 6. Rocky River and Cuyahoga River watersheds	15
Figure 7. Euclid Creek circulation	17
Figure 8. Euclid Beach and Villa Angela Beach CSO locations.....	18
Figure 9. Akron green infrastructure project.....	19
Figure 10. Akron WRF	19
Figure 11. Akron OCIT.....	19
Figure 12. NEORSD storage tunnels.....	21
Figure 13. Cleveland Metroparks beach cleaner	22

Purpose

The purpose of this document is to recommend the removal of the Beach Closings (Recreational Use) Beneficial Use Impairment (BUI) from the Cuyahoga River Area of Concern (AOC). This document provides information and documentation of recreational contact advisories, *E. coli* concentrations and sources, bacterial reduction strategies, and measures the results of the assessments against applicable State of Ohio Area of Concern BUI restoration targets.

Background

The Cuyahoga River lies in northeast Ohio, flowing into Lake Erie's central basin at the city of Cleveland. Its drainage basin covers an area of 813 square miles (Ohio EPA, 2003). For more than 100 years, the lower Cuyahoga River accepted discharges from many treatment systems (municipal and industrial facilities), sewer overflows, and storm water runoff. The river had become so severely degraded with loose debris, oil, and municipal and industrial wastes that it ignited several times. The last fire, which occurred in 1969, sparked a national environmental outrage that encouraged the first Earth Day Celebration, the creation of the U.S. EPA in 1970, and the passage of the Clean Water Act in 1972.

The Cuyahoga River from the Gorge Dam (River Mile 45.5) to the mouth at Lake Erie, a few neighboring Lake Erie tributary systems, and the associated Lake Erie nearshore areas had become so degraded that these areas were designated as a Great Lakes Area of Concern in 1987 under the U.S./Canada Great Lakes Water Quality Agreement (Figure 1).

Nine of the fourteen possible beneficial uses were listed as impaired in the Cuyahoga River AOC in the Stage 1 Report (Cuyahoga RAP, 1992). Five of the BUIs have been removed.

- #1 Restrictions on Fish Consumption REMOVED 2019
- #4 Fish Tumors and other Deformities REMOVED 2023
- #8 Eutrophication and Undesirable Algae REMOVED 2021
- #10b Recreational Access (Local BUI) REMOVED 2018
- #11 Degradation of Aesthetics REMOVED 2018

A locally driven beneficial use impairment (BUI), Recreational Access, was removed in 2018. Five BUIs remain classified as impaired in the Cuyahoga River AOC.

Remaining Impaired BUIs

- #3 Degradation of Fish Populations
- #6 Degradation of Benthos
- #7 Restrictions of Navigational Dredging Activities
- #10 Recreational Use (Beach Closings)
- #14 Loss of Fish Habitat

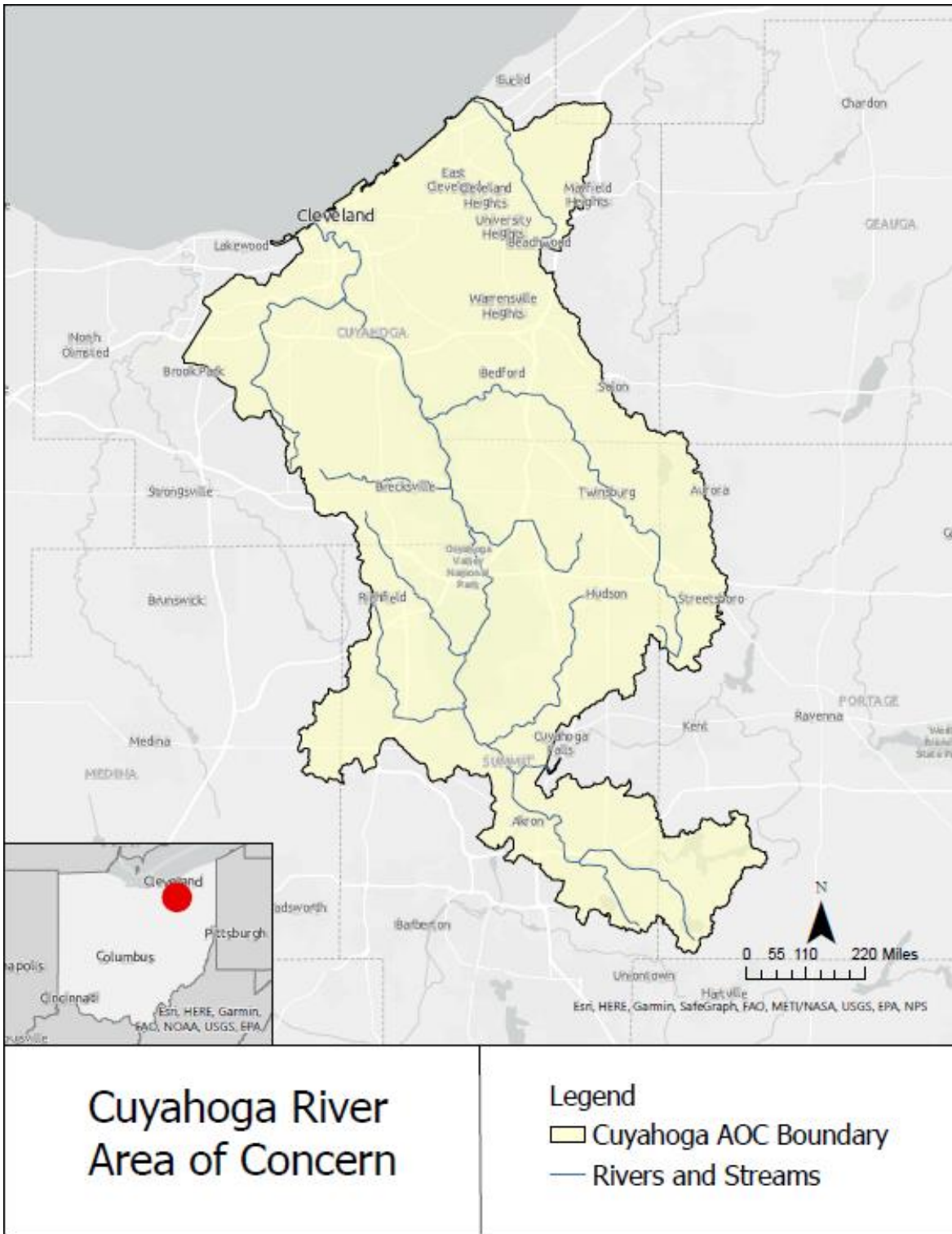


Figure 1. Cuyahoga River AOC

BUI Listing Criteria and Impairment Listing for Beach Closings Assessment Unit Characterization

The Public Bathing Beaches component of the BUI applies to three recreational beaches within the Cuyahoga River AOC: Edgewater Beach, Euclid Beach, and Villa Angela Beach. Edgewater Beach is located within Cleveland Metroparks Lakefront Reservation approximately 1.7 miles west of the mouth of the Cuyahoga River. The 2400-foot beach features 1000 feet of swimming access, kayak access, and a beach house with made-to-order food and beverages (Cleveland Metroparks, n.d.). Edgewater Park drew in 1,900,000 visitors in 2023, making it a top recreation destination in Northeast Ohio (Figure 2).



Figure 2. Edgewater Beach (Cleveland Metroparks, n.d.)

Euclid Beach and Villa Angela Beach are adjacent beaches located within Cleveland Metroparks' Lakefront Reservation (Figure 3). They are located approximately 9 miles east of the mouth of the Cuyahoga River, and directly west of the mouth of Euclid Creek. Euclid Beach features a 650-foot beach with shaded picnic areas, a scenic observation pier and a reservable pavilion (Cleveland Metroparks, n.d.). Villa Angela Beach boasts a 900-foot beach and a scenic boardwalk that leads out to a fishing pier. The two beaches and the adjacent Wildwood Marina and Boat Launch received approximately 530,000 visitors in 2023.



Figure 3. Map of Euclid and Villa Angela beaches (Cleveland Metroparks, n.d.)

The Primary Contact Recreation component of the Beach Closings BUI applies to Ohio Department of Natural Resources designated paddling streams. The entirety of the Cuyahoga River within the AOC boundary, and the lower 8.75 river miles of Tinkers Creek are designated as paddling streams (Figure 4).

The Chemical Contaminants component of the Beach Closings BUI applies to all waters within the AOC. This includes Cuyahoga River and its tributaries within the AOC boundary, the Lake Erie direct tributaries east of the Cuyahoga River to Euclid Creek, and Edgewater, Euclid, and Villa Angela Beaches.

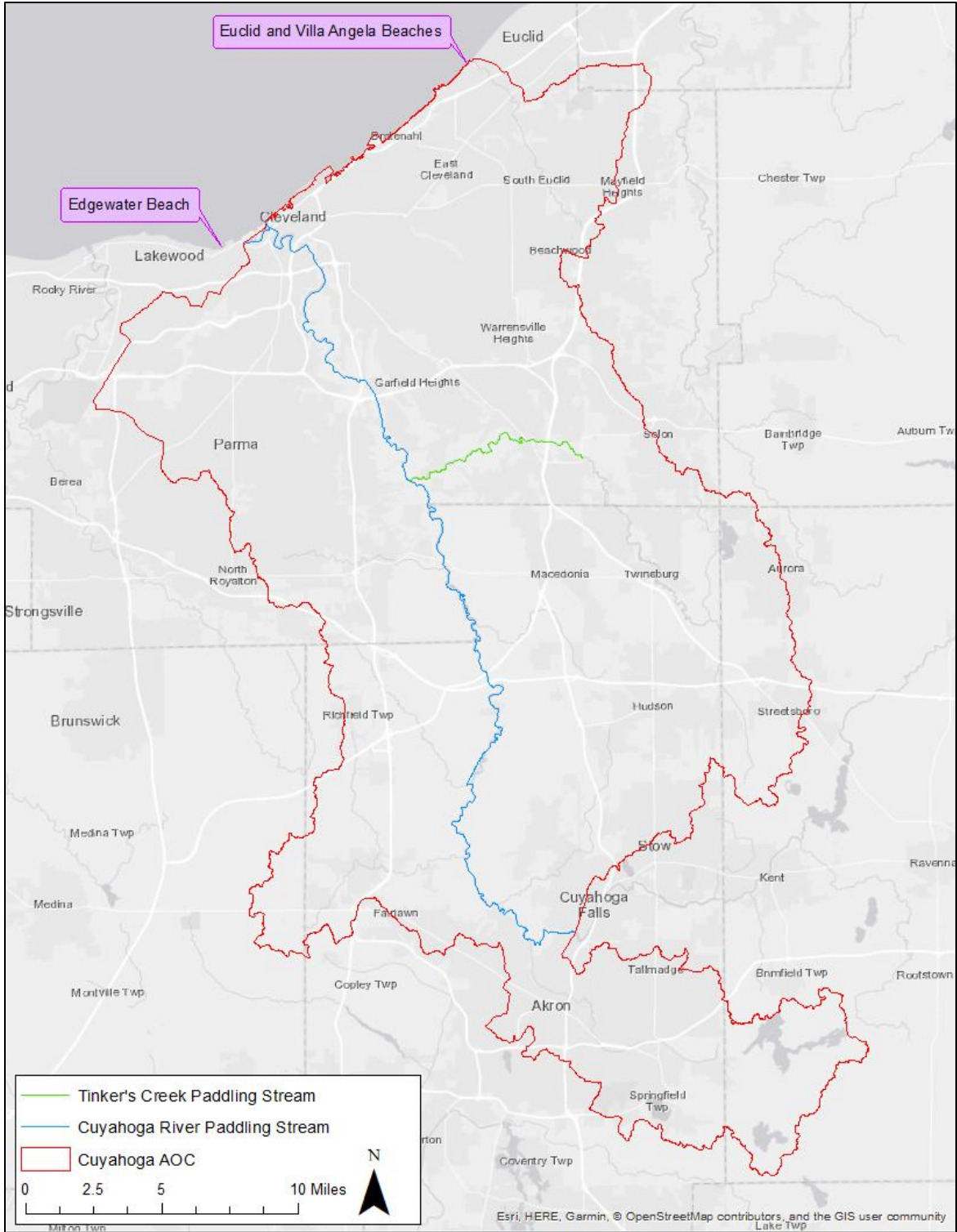


Figure 4. Cuyahoga River AOC beaches and paddling streams

Analysis of Stage 1 Remedial Action Plan Conclusions

The Beach Closings BUI was determined to be impaired in the Cuyahoga River Remedial Action Plan (RAP) Stage 1 report based on the IJC listing criteria. The criteria stated that this BUI should be listed as impaired when “waters, which are commonly used for total-body contact or partial-body contact recreation, exceed standards, objectives, or guidelines for such use” (Cuyahoga RAP, 1992). The report used fecal coliform data collected from the Cuyahoga River mainstem and nearshore Lake Erie to evaluate beach closings (swimming) and boating impairments (primary contact for water sports). It was determined that beach closings and boating impairments were impaired periodically. The most probable sources of this bacteria were “wastewater treatment plant bypasses, combined sewer overflows, storm sewers, nonpoint sources (urban runoff) and possibly boat discharges,” although specific sources could not be identified (Cuyahoga RAP, 1992).

A third component of the Beach Closings BUI, fishing impairments, was evaluated without the use of specific data sources. Factors causing fishing impairments include limited access to the water, degraded fish populations, loss of fish and wildlife habitat, debris, oil slicks, siltation, and degraded water clarity and quality that may adversely affect the desire to fish (Cuyahoga RAP, 1992). The fishing component of the BUI was not considered impaired.

Most of the data utilized in the Stage 1 Report for the BUI evaluations are not relevant to the current Ohio listing guidelines and restoration targets. Ohio’s water quality standards that were in effect during the development of the report are considerably different than the current standards. The fishing impairment component of the BUI is also not included in the current restoration targets because impairments to fish populations, habitat, and health are considered in other BUIs (Degradation of Fish Populations, Degradation of Fish Habitat, Fish Consumption, and Fish Tumors and Other Deformities). Conversely, the sources causing the beach closings and boating impairments in the Stage 1 Report are still relevant and have guided the bacterial reduction strategies that have contributed to the improvement of water quality within the Cuyahoga River AOC.

The Stage 1 Report also recognizes the importance of river and nearshore access as it relates to recreation. The report highlights the need for increased river and nearshore access, stating “along one eight—mile stretch of the river north of the National Park to the navigation channel, there is no public access at all. Access in the area below is also limited almost exclusively to commercial development (restaurants and bars). The situation in the nearshore area is better, but still access here is limited.” (Cuyahoga RAP, 1992) The Cuyahoga River AOC Advisory Committee designated a locally driven BUI to address the limited river access within the AOC. In 2018, the Recreational Access BUI (BUI 10b) was removed from the Cuyahoga River AOC, citing the creation of almost 2.5 miles of riverfront and lakefront access, 157 acres of recreational park facilities, and 25 miles of bike/hike trails (Cuyahoga RAP, 2018).

Analysis of Stage 2 Remedial Action Plan Conclusions

Stage 2 RAP Report evaluated the status of the Beach Closings BUIs and recommended remedial actions. The status of the beach closings (recreation use) BUI #10a was “impaired periodically” due to combined sewer overflows (CSOs) and other sources of bacteria (CRCC 2012 p. 11). The recommended management actions were the development and implementation of long-term control plans to address CSOs in the Northeast Ohio Regional Sewer District (NEORS) and in the city of Akron service area. No other management actions to address this BUI were identified.

The Stage 2 Design Implementation Plan Update and Progress Report presented BUI determination, justification, and causes and sources of impairment. Edgewater, Euclid, and Villa Angela beaches did not meet the restoration target for the years 2009 through 2013 (Cuyahoga River Restoration, 2012). The Cuyahoga River paddling stream also did not meet the restoration target, given that the Cuyahoga River mainstem was on the State of Ohio’s list of impaired waters under its 303(d) list. The paddling portion of Tinkers Creek was not discussed in the Stage 2 Report. Sources of bacteria within the AOC were broadly listed as “package plants, CSO/Sanitary Sewer Overflows (SSOs), home sewage treatment systems (HSTs), commercial on-site systems, land application of organic materials, storm water, concentrated animal feeding operations (CAFOs) and other livestock operations, and permitted wastewater treatment plants (WWTPs)” (Cuyahoga River Restoration, 2012). The report recognized the ongoing efforts to address these issues, including the TMDL program, local health department efforts to identify and correct failing septic systems, targeted state funding and programs to address unsewered areas, non-point source reduction programs, and investments to address stormwater and CSO/SSO issues (Ohio EPA, 2003).

Current Impairment Listing

BUI removal and restoration targets in Ohio’s AOCs are guided by the “Delisting Guidance and Restoration Targets for Ohio Areas of Concern,” updated most recently in 2023. The current listing criteria for this BUI contains conditions for Public Bathing Beaches, Primary Contact Recreation, and Chemical Contaminants (Ohio EPA & Ohio Lake Erie Commission, 2023). Under the State of Ohio Listing Guideline, the beneficial use shall be listed as impaired if any of the following occur:

Public Bathing Beaches: Bathing beach advisories are posted for more than 10 percent of the recreational season due to bacterial contamination (*E. coli*) OR advisories are posted for more than 10 percent of the recreational season due to algal toxins. OR

Primary Contact Recreation (Paddling Streams): Ohio Department of Natural Resources designated Paddling Streams that are within the AOC are included on Ohio’s most recent Clean Water Act Section 303(d) list of impaired waters for recreational use due to bacterial contamination (*E. coli*) AND combined sewer overflows (CSOs) are either not present or not being addressed. OR

Chemical Contaminant (all waters): A state or local government agency has issued a warning to avoid contact with the water due to the presence of a chemical of concern, such as PCB or PAH.

State of Ohio Restoration Target and Removal Criteria

The Ohio AOC Delisting Guidance (Appendix A) states that a BUI can be removed under any of the following circumstances:

- Removal targets have been met and follow up monitoring or other evaluations confirm that the beneficial use has been restored;
- It can be demonstrated that the BUI is due to natural rather than human causes;
- It can be demonstrated that the impairment is not limited to the local geographic extent of the AOC, but rather is typical of lake-wide, region-wide, or area-wide conditions (under this situation, the beneficial use may be incorrectly recognized as impaired); or
- The impairment is caused by sources outside the AOC. The impairment is not restored, but the impairment classification can be removed or changed to “impaired-not due to local sources.” (Responsibility for addressing “out of AOC” sources are assigned to another party or program, e.g., Lakewide Management Plan, TMDLs, or health department.)

The current restoration targets for the Beach Closings BUI states this beneficial use can be removed when following conditions are met for public bathing beaches, designated paddling streams and chemical contaminant contact advisories:

Public Bathing Beaches: This BUI will be considered restored when posted contact advisory days¹ due to bacterial contamination (E. coli) do not exceed 10 percent (or 19 days) of the recreation season; AND posted recreational public health advisory days due to algal toxins do not exceed 10 percent (or 19 days) of the recreation season. This target must be met in 3 out of the most recent 5 years; OR

In cases where public bathing beaches within the AOC have posted contact advisory days for either bacterial contamination (E. coli) or algal toxins that exceed 10 percent of the recreation season and Combined Sewer Overflows (CSOs) are the primary cause, the BUI will be considered restored when the bacterial impacts from CSOs are being addressed under an approved long-term control plan or other legally-binding document.

Primary Contact Recreation (Paddling Streams): No Ohio Dept. of Natural Resources designated Paddling Stream within the AOC is included on Ohio’s most recent 303(d) list of impaired waters due to bacterial contamination (E. coli) OR

If an Ohio Dept. of Natural Resources designated Paddling Stream within the AOC is on the list of non-attaining waters because of bacterial contamination (E. coli) and the presence of Combined Sewer Overflows (CSOs) are the primary cause, this BUI will be considered restored when the bacterial

¹ For Cuyahoga AOC beaches, bacteriological sampling data may be used in lieu of advisory data if sampling was conducted 7 days per week during the entire sampling season. Exceedances of the Beach Action Value will be counted as Advisory Days if using bacteriological sampling data.

impacts from CSOs are being addressed under an approved long-term control plan or other legally-binding document; AND

If an Ohio Dept. of Natural Resources designated Paddling Stream within the AOC is on the list of non-attaining waters because of bacterial contamination (*E. coli*) and the presence of non-point source pollution is the primary cause, this BUI will be considered restored when a TMDL is approved and the State and RAP can document that the level of bacterial contamination is not significantly worse than similar watersheds.

Chemical Contaminant (all waters): No local or state contact advisories related to the presence of a chemical contaminant exist.

Data Sources

Data sources utilized for the Public Bathing Beaches evaluation include state and local bacteria surveys, algal toxin monitoring, and recreational contact advisory postings. These datasets are available on the Ohio Department of Health BeachGuard website ([BeachGuard](#)). Local bacterial studies and source evaluations were also used in the BUI evaluation.

Recreational contact advisories for Edgewater, Euclid, and Villa Angela beaches are issued by NEORSRD between Memorial Day and Labor Day, also referred to as the swim season. *E. coli* sampling occurs seven days per week at all beaches during this period. Additional *E. coli* sampling may occur four days per week outside of the swim season to support predictive model development.

Once *E. coli* samples are collected, it takes between 18-24 hours to receive a result. Persistence models are used to make an advisory determination based on the previous day's *E. coli* concentration and are commonly used around the Great Lakes. Predictive models are another commonly used method to determine contact advisories due to bacterial contamination (Frick W.E. & Z. GE, 2007). These models use same day explanatory variables, such as turbidity, temperature, and rainfall to predict bacteria concentrations that inform advisories. NEORSRD uses predictive models to estimate when *E. coli* concentrations are expected to exceed 235 Colony Forming Units per 100 milliliters (CFU/100mL), also referred to as the Beach Action Value (BAV), at Edgewater, Euclid, and Villa Angela beaches. If the model predicts an exceedance of the BAV then an advisory is posted for that current day. The models used for the Cuyahoga River AOC beaches are typically between 70-80% accurate but contain an added margin of safety and therefore overpredict the number of advisory days. Because the Cuyahoga River AOC beaches have *E. coli* results collected 7 days a week during the swim season, Ohio's Delisting Guidance states that *E. coli* data can be used to evaluate the Beach Closings BUI in lieu of advisory data. The use of *E. coli* data allows for a more accurate evaluation of the BUI compared to number of advisory days in the Cuyahoga AOC, due to the inflated number of advisory days resulting from model overpredictions. Days over the BAV will be referred to as "advisory days" for the purpose of the Beach Closings Evaluation.


The Paddling Streams evaluation utilized data from Ohio EPA bacterial surveys (Ohio EPA, 2023 & Ohio EPA, 2020), Total Daily Maximum Loads (TMDLs) (Ohio EPA, 2003), and Local Long-Term Control Plans (LTCPs).

Ohio Department of Health chemical contamination advisories were used to determine the Chemical Contaminants impairment status.

Public Bathing Beach Closings Evaluation

To evaluate the status of the Public Bathing Beach Closings portion of the Beach Closings BUI, posted contact advisories due to bacterial contamination based on exceedances of the BAV for Edgewater, Euclid, and Villa Angela beaches from 2019-2023 were compared to the state’s restoration targets (Table 1). The restoration targets state that advisory days do not exceed 10%, or 19 days, of the 184-day recreation season during three out of the five most recent years.

Year	Edgewater		Euclid		Villa Angela	
	Number of Days	Percent of Recreation Season	Number of Days	Percent of Recreation Season	Number of Days	Percent of Recreation Season
2023	28	15%	24	13%	29	16%
2022	17	9%	31	17%	34	18%
2021	11	6%	33	18%	35	19%
2020	16	9%	24	13%	27	15%
2019	19	10%	35	19%	41	22%

 = does not meet restoration targets

The evaluation determined that Edgewater Beach meets the restoration targets, while Euclid and Villa Angela beaches do not. From 2014-2023, there has been a significant decline in advisory days for Euclid and Villa Angela beaches (Figure 5). This document further outlines previous efforts that have taken place within the Cuyahoga River AOC to improve the conditions at these two beaches.

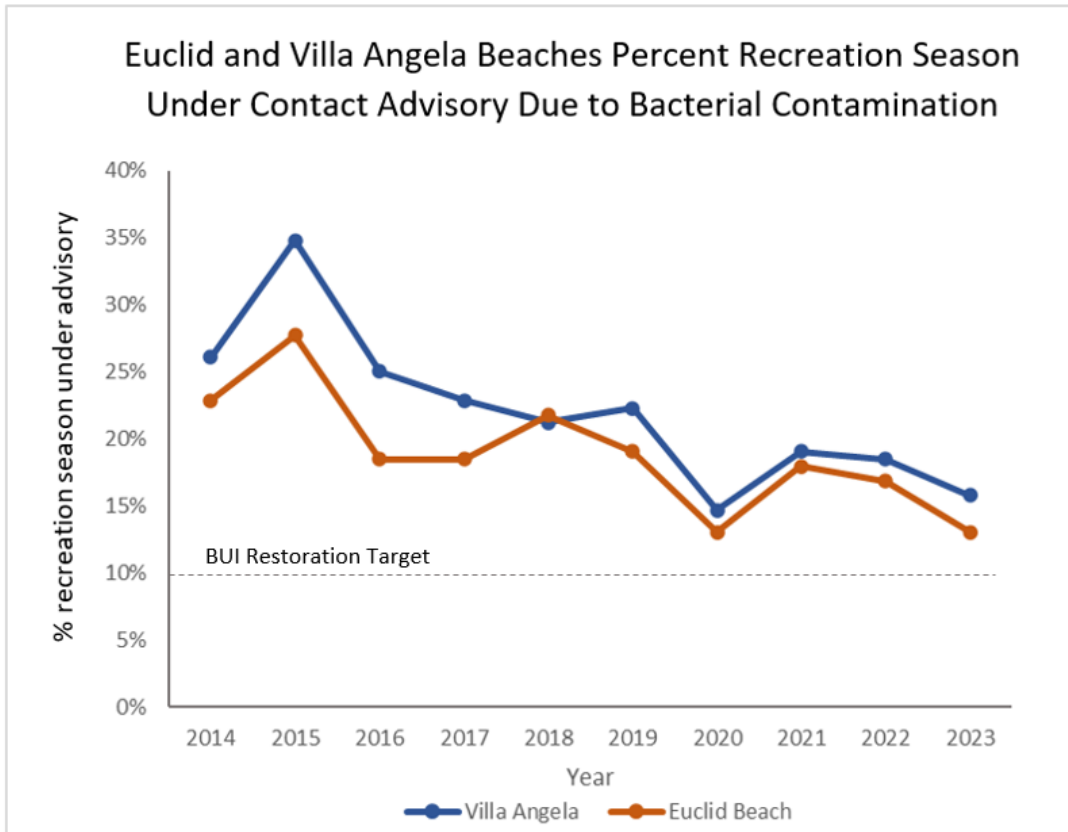


Figure 5. Euclid and Villa Angela beaches percent recreation season under advisory

While Euclid and Villa Angela beaches did not meet the Beach Closings BUI restoration target, the removal of the Beach Closings BUI can occur under several circumstances referenced from Ohio’s Delisting Guidance and Restoration Targets for Ohio Areas of Concern (Ohio EPA & OLEC, 2023) and outlined in the State of Ohio Restoration Target and Removal Criteria section of this report. Removal of a BUI may be warranted, if it can be demonstrated that the impairment is not limited to the local geographic extent of the AOC, but rather is typical of lake-wide, region-wide, or area-wide conditions.

The occurrence of recreational contact advisory days due to bacterial contamination is common throughout publicly owned beaches in Lake Erie’s Central Basin. Bacterial contact advisories exceeding 10% of the recreation season during three of the five most recent years occurred at 41% of the non-AOC Central Basin beaches (Appendix B). This indicates that elevated advisory postings are not exclusive to the Cuyahoga River AOC and are suggestive of a region-wide issue. Furthermore, the *E. coli* seasonal geomean at all three Cuyahoga River AOC beaches was less than the seasonal geomean average across all non-AOC Central Basin beaches in four of the five most recent years. This suggests that on average, the Cuyahoga AOC beaches have not exhibited a higher degree of bacteriologic contamination than non-AOC beaches.

The sources of impairment and responsibility to remediate the sources can also play a role in the removal of the Beach Closings BUI. The Stage 2 Report cites the potential sources of bacteria

within the AOC, as well as the ongoing efforts to address those sources. This document will further outline the previous and ongoing efforts and studies that have taken place at the Cuyahoga River AOC beaches. Local partners have done their due diligence to assess and evaluate the bacterial sources and determined that the remaining sources are primarily related to infrastructure issues within the watershed.

Algal Toxins

The Beach Closings portion of the BUI also contains restoration targets for contact advisory days due to algal toxins. Toxin producing algal blooms can occur in Lake Erie’s Central Basin, but generally occur less frequently and are milder in severity compared to the Western Basin. From 2021-2023, no contact advisories due to algal toxins were reported at Edgewater, Villa Angela, or Euclid beaches. One advisory day was reported in 2020 at Edgewater Beach, and eight advisory days were reported in 2019 at all three beaches. All three beaches met the restoration target of exhibiting less than 19 advisory days due to algal toxins during the recreation season from 2019-2023; therefore, all Cuyahoga River AOC beaches have met the algal toxin advisory component of the restoration target.

Year	Edgewater		Euclid		Villa Angela	
	Number of Days	Percent of Recreation Season	Number of Days	Percent of Recreation Season	Number of Days	Percent of Recreation Season
2023	0	0%	0	0%	0	0%
2022	0	0%	0	0%	0	0%
2021	0	0%	0	0%	0	0%
2020	1	0.5%	0	0%	0	0%
2019	8	4%	8	4%	8	4%

Paddling Streams Evaluation

The Ohio EPA identifies impaired waters within the State to develop the prioritized list of impaired waters that is required under Section 303(d) of the Clean Water Act. The entire Cuyahoga River Mainstem within the AOC boundary was included on the Ohio’s 2022 303(d) list of impaired waters due to bacterial contamination (Ohio EPA, 2022). The assessment units included Fish Creek-Cuyahoga River (HUC 04110002 03 05), Boston Run-Cuyahoga River (HUC 04110002 04 05) and the Cuyahoga Large River Assessment Unit (LRAU 04110002 90 01).

The 2003 TMDL listed non-point sources as the primary cause of bacterial impairment throughout the three Assessment Units (Ohio EPA, 2003). To meet the restoration target for paddling streams, the Lower Cuyahoga River requires an approved TMDL and documentation that contamination is not significantly worse than a similar watershed. The 2003 Cuyahoga River TMDL satisfies the first portion of the restoration target.

Rocky River mainstem *E. coli* concentrations were compared to Cuyahoga River mainstem (RMs 0.5-42.6) *E. coli* concentrations to determine whether contamination within the two rivers significantly differed (Appendix C). The Rocky River watershed is located in Northeast Ohio, immediately adjacent to the Cuyahoga River watershed (Ohio EPA, 2001). The Rocky River watershed is determined to be a similar watershed because of its close proximity to the Cuyahoga River (Figure 6) and comparable land use (Ohio EPA, 2023 & Ohio EPA, 2020). A Mann Whitney U test showed that there was not a significant difference between *E. coli* concentrations for the Rocky River mainstem compared to the Cuyahoga River mainstem during dry weather ($Z = 1.6697$, $p = 0.095$). The Rocky River *E. coli* concentrations were significantly higher than the Cuyahoga River during wet weather ($Z = -9.775$, $p < 0.0001$).

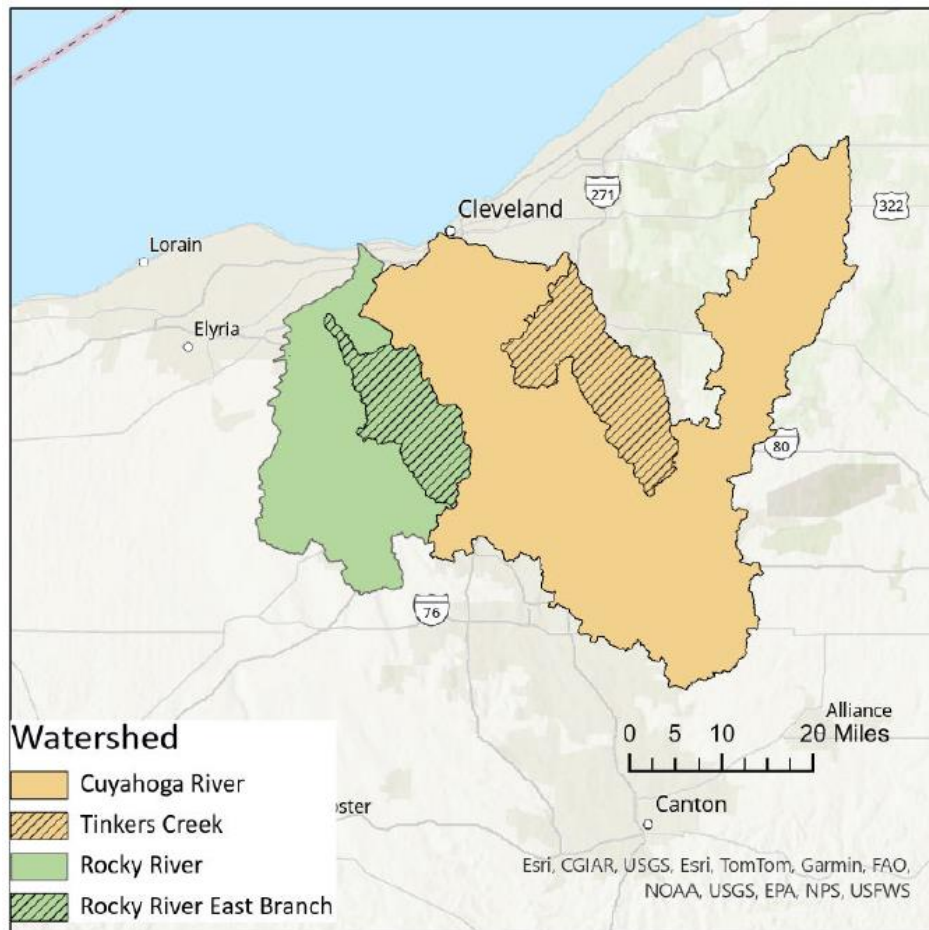


Figure 6. Rocky River and Cuyahoga River watersheds

The Tinkers Creek paddling stream (RMs 0-8.75) (HUC 04110002 05 02) was also included on Ohio's 2022 303(d) list of impaired waters due to bacterial contamination (Ohio EPA, 2022). Tinkers Creek was included in the 2008 Lower Cuyahoga River TMDL, though specific bacterial sources in the Tinkers Creek Watershed were not outlined in the TMDL. The 2017-2018 Biological and Water Quality Study of the Cuyahoga River states that the primary sources of bacteria to Tinkers Creek is WWTP and urban runoff (Ohio EPA, 2023). Because CSOs are not causing the bacterial contamination to Tinkers

Creek, the inclusion of Tinkers Creek in the 2003 Lower Cuyahoga River TMDL satisfies a component of the restoration target.

Rocky River East Branch *E. coli* concentrations were compared to Tinkers Creek (RMs 0.1-6.32) *E. coli* concentrations to determine whether contamination within the two rivers significantly differed (Appendix C). A Mann Whitney U test showed that *E. coli* concentrations in the Rocky River East Branch were significantly higher than in the paddling portion of Tinkers Creek during dry weather ($Z = -4.96$, $p < 0.001$). There was no significant difference in *E. coli* concentrations between the two streams during wet weather ($Z = -1.6558$, $p = 0.1291$).

Euclid and Villa Angela Beach Bacterial Source Documentation

Euclid Creek

Euclid Creek is a flashy urban stream that discharges to Lake Erie immediately east of Villa Angela Beach. The Euclid Creek watershed is over 80% developed, with approximately 47% of its land being used for single family residential development (Euclid Creek Watershed Program, 2018). Water quality impairments caused by CSOs and urban runoff/storm sewers contribute to the non-attainment status of Warmwater Habitat aquatic life use and Primary Contact recreational criteria (Northeast Ohio Regional Sewer District, 2022). CSOs to Euclid Creek have been reduced by 98% since 2020 as a result of NEORSD's long-term control plan, which will be discussed further in this document.

NEORSD conducted a microbial source tracking (MST) study on Euclid Creek between 2019-2021. The study determined that while CSOs have been significantly reduced, human sewage is primarily responsible for the elevated *E. coli* concentrations in Euclid Creek. It was surmised that the presence of human sewage is due to “a combination of multiple sources of contamination including but not limited to cross contamination between storm and sanitary sewers in common trench local collection systems, local collection system combined and sanitary sewer overflows, and urban runoff (Northeast Ohio Regional Sewer District, 2022)”. Inflow and infiltration in the aging local collection system is another widespread problem believed to impact Euclid Creek and the adjacent AOC beaches (NEORSD, 2024). This is further supported by evidence that CSOs were responsible for only 27% of the *E. coli* loading in Euclid Creek, with the other 73% originated from other sewer system types (NEORSD, 2024). While the NEORSD LTCP may continue to improve Euclid's Creek's water quality, the local infrastructure issues causing human sewage contamination in Euclid Creek and the beaches require further investigation within the local collection systems to identify and remediate. The AOC program does not typically address infrastructure related issues: therefore, the ongoing issues resulting in human contamination to Euclid Creek and Villa Angela and Euclid beaches are recommended to occur by the local communities. Enforcement and sewer related issues and remediation is the responsibility of Ohio EPA under the National Pollutant Discharge Elimination System program.

Euclid Creek's discharge has been shown to mix with Villa Angela and Euclid beaches (Figure 7) (USGS, 2013). The mixing zone is highly variable and largely dependent on longshore currents and wind patterns but can persistently impact the water quality at both beaches, but there are times where no mixing occurs (USGS, 2013). A 2022 study by NEORSD used MST to determine that the increased *E. coli* concentrations at Villa Angela beach were likely due to increased human sewage

contamination rather than animal sources including gulls, geese, dogs, and deer (Northeast Ohio Regional Sewer District, 2023). This is expected, as elevated *E. coli* concentrations due to human bacterial contamination in the adjacent Euclid Creek, as determined by the 2019-2021 MST study, are regularly detected in surface water samples.

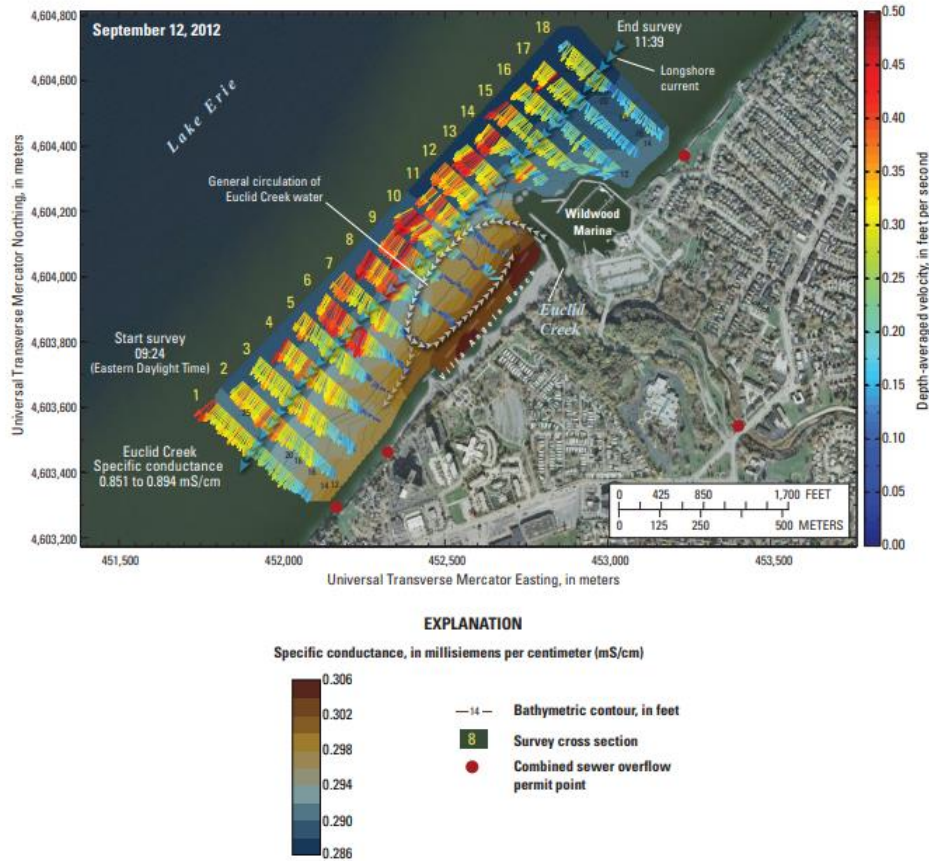


Figure 7. Euclid Creek circulation

Combined Sewer Overflows and WWTP Bypasses

Several CSOs and one WWTP headworks treatment bypass are in proximity to Euclid and Villa Angela beaches (Figure 8). A total of 305 CSO discharges occurred at CSOs #239, 242, and 206 from 2015-2019. This resulted in 397.4 million gallons (MG) of untreated sewage entering the environment. From 2020-2022, only 7 CSOs (4.6 MG) occurred at these CSOs as a result of the NEORS D LTCP. The headworks treatment bypass at Easterly WWTP (CSO-001) had 180 events from 2015-2022 that resulted in 7,253 MG of untreated sewage entering Lake Erie. These CSOs may be contributing to the elevated *E. coli* concentrations at Euclid and Villa Angela beaches, although NEORS D is implementing projects at Easterly WWTP to reduce these overflows in the future.



Figure 8. Euclid Beach and Villa Angela Beach CSO locations

Padding Streams Bacterial Source Documentation Cuyahoga River TMDL

The Ohio EPA developed a TMDL for the Lower Cuyahoga River, including the Tinkers Creek subwatershed, to identify and address issues leading to impairments of the aquatic life and recreational uses (Ohio EPA, 2003). The document lists organic enrichment, nutrients, bacteria, flow alteration, toxicity, and degraded habitats as the primary causes of impairment. Within the Lower Cuyahoga River watershed and upstream of Cuyahoga River RM 13.1, the primary sources of *E. coli* that required load reductions as determined by the report included runoff, CSOs and treatment bypasses from the City of Akron, and septic systems. A 98% reduction of the City of Akron's CSOs and treatment bypasses was identified in order to meet the *E. coli* target.

A fecal coliform load duration for Tinkers Creek was included in the Lower Cuyahoga River TMDL but point and non-point sources were not allocated. Watershed stressors include organic enrichment, nutrient enrichment, low in-stream dissolved oxygen, toxicity, sedimentation, habitat degradation, bacteria, and yet unknown impairments (Chagrin Valley Engineering, LTD, 2017). Primary bacteria sources within the watershed are caused by failing septic systems, SSOs, and non-point source pollution from impervious land cover.

Remedial Actions

City of Akron Long-term Control Plan

In November of 2011, the city of Akron prepared a LTCP Update for controlling CSOs and Water Reclamation Facility secondary by-passes. This plan is part of the 2009 Akron Consent Decree with US EPA and Ohio EPA that was entered by the Federal Court in January 2014. The Consent Decree requires all projects to be completed by October 2027. Akron is required to have no CSO in its modeled typical year. Akron has no SSO as they were eliminated between 1970-1990 (City of Akron, Akron Waterways Renewed). Akron's LTCP plan impacts the southernmost portion of the AOC boundary, including RM 37-46 of the Cuyahoga River mainstem and portions of the Little Cuyahoga River subwatershed. The Stage 2 Report recognized that the implementation of Akron's LTCP was critical to restoring the Beach Closings BUI.

Akron has successfully completed 24 of the 26 major projects outlined in the LTCP, including projects at the Water Reclamation Facility (WRF) (Figure 10), increasing the secondary treatment capacity from 110 million gallons a day (MGD) to 220 MGD, and construction of a 60 MGD biological wet weather treatment system at the WRF. Several green infrastructure projects have been completed as well (Figure 9).



Figure 10. Akron green infrastructure project



Figure 9. Akron WRF

The 27-ft diameter Ohio Canal Interceptor Tunnel (OICT) (Figure 11) with a storage capacity of 25.6 MG was completed and put into service in June of 2020. The Northside Interceptor Tunnel Project is currently under construction and will be completed in 2026. Upon completion of all 26 projects, approximately 99% of the wet weather flow will be captured and/or treated, reducing the number of CSO events by 99.7%. Akron will reduce CSO/WRF Secondary Bypass from 2,400 MGD per year to less than 100 MG per year. The current price tag of the Akron projects is \$1.2 billion. In addition, Akron has completed construction of five CSO storage basins, five green/conveyance/sewer separations projects, five sewer separation projects, pump station improvements, several sewer



Figure 11. Akron OCIT

rehabilitation and lining projects and an extensive sewer cleaning and inspection program at a cost exceeding \$740 million.

NEORSD Long-term Control Plan

In 2011, NEORSD entered into a consent decree with the U.S. EPA and the State of Ohio to reduce raw sewage discharges to the environment to come into compliance with Clean Water Act. NEORSD's \$3 billion, 25-year plan to address these issues, called Project Clean Lake, will significantly reduce the amount of pollution entering the Cuyahoga River and Lake Erie from combined sewer overflows by over 98%, or a reduction from 4,500 MGD per year to an estimated 494 MG per year (NEORSD, 2024). The primary method of achieving this 98% reduction is the "construction of seven tunnels, ranging from two to five miles in length (Figure 12), up to 300 feet underground and up to 24 feet in diameter" (NEORSD, 2024). The tunnels and associated facilities will function primarily during storm events when the combined sewer system would normally get overwhelmed and discharge to the environment. The tunnels will capture the flow and store it until the storm passes. When the wastewater treatment plants have capacity following the storm, the tunnels' pump stations send the flow to the wastewater treatment plants, where the flow is processed and fully treated before being released to the environment.

In addition to the new tunnels and pumpstations, upgrades to increase treatment capacity will occur at all three NEORSD WWTPs, which will further reduce the volume of raw sewage entering Lake Erie and will increase the level of treatment during high flow events. This will include the installation of a Chemically Enhanced High-Rate Treatment system at all three plants. At the Easterly WWTP, located one mile west of Euclid Beach, secondary treatment capacity was increased from 300 MGD to 400 MGD. Secondary treatment capacity at Southerly WWTP was also increased. Additionally, NEORSD has eliminated 16 CSOs. As part of Project Clean Lake, NEORSD has also invested in green infrastructure; these projects reduce the yearly Combined Sewer Overflow by removing stormwater from the combined sewer systems. Primarily located within the City of Cleveland, these projects will "store, infiltrate, and evapotranspire stormwater before it even makes its way to the combined sewer system" (NEORSD, 2024).



Figure 12. NEORSD storage tunnels

As of December 2023, 13 of 25 control measures for Project Clean Lake have been completed, including three of the seven storage tunnels. The Dugway, Doan Valley, and Euclid Creek storage tunnels that impact Euclid and Villa Angela beaches have been online since 2019. The Westerly Tunnel is completed and will be functional by the end of 2024. There has been approximately 1,730 MG of CSO reduction per year since 2011. The remaining control measures will allow NEORSD to reach its goal of over a 4,000 MG per year CSO reduction by 2036. The Sewer District is currently on track to complete the final control measure (the Big Creek Tunnel) one year ahead of schedule.

Illicit Discharge Remediation

Illicit discharges, or any discharge to a storm sewer system other than rainwater, may cause significant impacts to public health and aquatic life (Brown et al., 2004). Under the Ohio NPDES MS4 General Permit Phase II stormwater regulation, municipalities are required to “Develop, implement, and enforce a program to detect and eliminate illicit discharges” (Ohio EPA, 2002). The goals of this program are to create an inventory of storm sewer outfalls, prohibit and enforce non-stormwater discharges into the storm sewers, develop a plan to detect and address illicit discharges, and educate the public about the hazards associated with illegal discharges.

NEORSD provides illicit discharge detection and elimination support services to member communities within its service area, including a significant number of communities within the Lower Cuyahoga River watershed. The City of Akron’s illicit discharge program covers a considerable portion of the Middle Cuyahoga River watershed, which influences downstream water quality within the AOC. Both programs have an inventory of storm water outfalls within their service areas, and regularly assess these outfalls for illicit discharges. If an illicit discharge is detected, the programs identify the source and facilitate remediation. Since 2020, 183,645 gallons per day of sewage has been removed

from the Cuyahoga River watershed as a result of NEORSD’s Illicit Discharge Detection and Elimination program. The city of Akron has eliminated over 1,791,800 gallons of sewage from illicit discharges and SSOs going to the Cuyahoga River and its tributaries since 2019. NEORSD and Akron’s illicit discharge programs cover a significant portion of the Cuyahoga River AOC boundary. MS4 communities that are not overseen by the NEORSD and City of Akron Illicit Discharge programs are required to develop similar programs. The continued effort to limit the sanitary sewage and other pollutants entering the Cuyahoga River and Lake Erie is crucial in protecting the health of humans and the environment.

Beach Maintenance and Operations

The Cleveland Metroparks is responsible for Edgewater, Euclid, and Villa Angela beach maintenance. Keeping the beaches free of trash and debris is an important step in limiting the gull and other wildlife populations. To remove trash and debris, a tractor and beach cleaner (sand sifter) (Figure 13) is used five days a week on the beaches during the swim season and 2-3 days a week in the fall and spring as weather dictates. Metroparks staff is also responsible for hand picking the beaches for trash and removing larger trash and debris that would damage the sand sifters and rakes. Trash cans are placed at all beach entry/exit points and are serviced daily. Cleveland Metroparks staff may also assist in detecting water quality issues, such as potential HABs.



Figure 13. Cleveland Metroparks beach cleaner

Several Cleveland Metroparks and Alliance for the Great Lakes groups conduct beach clean-up events at all three AOC beaches throughout the year. Volunteers at these events include members of the public, local organizations, and school groups. In 2023 alone, there were 70 beach cleanup events across the three AOC beaches. Approximately 1,900 volunteers spent a total of 3,933 hours at these events, and removed over 2100 pounds of litter from Edgewater, Euclid, and Villa Angela beaches.

Waterfowl, including gulls and geese, are a known source of *E. coli* at Euclid and Villa Angela beaches, and are a probable source at Edgewater Beach (NEORSD, 2021). The Cleveland Metroparks has utilized and funded a gull and geese control service since 2014 at all three AOC beaches. The program is a long-term nuisance bird management initiative in which the end goal is to ‘break the cycle’ of home range/rearing of young on these properties. It consists of harassment techniques including the use of dogs, small remote-control watercraft, laser pointers, egg adding, and chemical deterrents. In addition, “No Feeding” signs are posted throughout the beaches to discourage the public from feeding and attracting waterfowl.

Conclusion

Beach Closings

The results of the Beach Closings evaluation determined that Edgewater Beach met the BUI removal targets from 2019-2023. While Villa Angela and Euclid beaches did not meet the targets, Villa Angela and Euclid beaches have not exhibited a higher degree of bacteriological contamination

compared to other non-AOC beaches in recent years (Appendix B). The adjacent Euclid Creek, containing elevated levels of human bacteria, has been shown to impact Villa Angela and Euclid beaches. It has also been shown that the primary bacterial sources contributing to beach closings at these locations are from humans. This suggests that infrastructure related issues impacting Euclid Creek, and then circulating with the adjacent beaches, may be responsible for the elevated number of beach advisories at Villa Angela and Euclid beaches. Most NEORS D LTCP projects to limit CSO discharge to Euclid Creek and the adjacent beaches have been completed, indicating that illicit discharges, sanitary sewer overflows, and urban runoff are the primary source of human bacteria to Euclid Creek and the adjacent beaches. In addition, aging infrastructure within the Euclid Creek watershed has been related to inflow and infiltration of sanitary sewage to the storm water collection system. The detection and remediation of these ongoing infrastructure issues should be addressed by local communities and/or regulatory agencies.

Significant investments have been made within the Cuyahoga River AOC to reduce bacterial loading to the Cuyahoga River and Lake Erie. The City of Akron and NEORS D's ongoing LTCPs have reduced the volume of untreated wastewater entering the environment by several billion gallons per year, with further reductions expected in the future. Illicit discharge detection and remediation programs throughout the AOC have also contributed to the reduction of bacterial loading. These programs can allow local infrastructure-related issues to be identified and remediated, which may further reduce the bacterial concentrations in the Cuyahoga River and AOC beaches. Continued maintenance at Edgewater, Villa Angela, and Euclid beaches is also essential in managing waterfowl that contribute to bacterial loading. Removing trash and debris that attract wildlife and managing the gulls and geese directly are ongoing efforts across all three AOC beaches.

As stated in the United States Delisting Principles and Guidelines (U.S. Policy Committee, 2001) and Ohio's Delisting Guidance and Restoration Targets for Ohio Areas of Concern (OLEC, 2023), a BUI can be removed if "it can be demonstrated that the impairment is not limited to the local geographic extent, but rather is typical of lake-wide, region-wide, or area-wide conditions." Beaches with closures due to bacterial contamination exceeding 10% of the recreation season are common in Lake Erie's Central Basin. Approximately 41% of the Central Basin public beaches had bacterial advisories exceeding the BUI targets from 2019-2023, indicating a region-wide issue. The AOC Program has determined that removal of the Beach Closings BUI is warranted based on the regional extent of beach impairments, as well as the thorough identification of bacterial sources impacting Euclid and Villa Angela beaches and associated active management and improvements.

Paddling Streams

The paddling portion of the Cuyahoga River and Tinkers Creek meets the BUI restoration targets. The targets require an approved TMDL for the Cuyahoga River and Tinkers Creek and documentation that contamination is not significantly worse than a similar watershed. The 2003 Cuyahoga River TMDL satisfies the first portion of the restoration target, and it was determined that the Cuyahoga River and Tinkers Creek do not have significantly different *E. coli* concentrations, or have significantly lower concentrations, than the Rocky River and Rocky River East Branch during wet and dry weather. In addition, NEORS D and the City of Akron continue to implement projects under their LTCPs that will reduce the volume of untreated sewage to the Cuyahoga River by over 98%

within their respective service areas. The LTCPs along with the continuation of other programs, such as illicit discharge programs throughout the AOC, will reduce the bacterial loading and improve in-stream conditions within the AOC.

Chemical Contaminants

There are no existing contact advisories due to chemical contaminants at Edgewater, Euclid, and Villa Angela beaches, or within the Cuyahoga River and its tributaries; therefore, this component of the BUI was not considered impaired.

Recommendation

Based upon the findings of the BUI evaluation, the Ohio Lake Erie Commission and Ohio EPA recommend the removal of the Beach Closings BUI from the Cuyahoga River AOC based on the following conditions:

- Edgewater Beach meets the restoration targets.
- Posted contact advisories due to bacterial contamination are a region-wide issue.
- The bacterial contamination at Euclid and Villa Angela beaches may be related to human sources originating from Euclid Creek. Human bacterial sources are suggestive of infrastructure related problems within the watershed. Remediation of infrastructure issues are recommended to occur outside of the scope and funding of the AOC program.
- Non-point source bacterial contamination within the Cuyahoga River paddling stream is addressed by the 2003 Cuyahoga River TMDL.
- CSOs to the Cuyahoga River paddling stream will be significantly reduced by the City of Akron and NEORS D LTCPs.
- Bacterial contamination in the Cuyahoga River and Tinkers Creek is not significantly worse than similar watersheds.

A 21-day public comment period was issued by Ohio EPA and Ohio Lake Erie Commission for the Draft BUI Removal Recommendation. A summary of the public comments and response can be found in Appendix D.

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Appendix A - 2023 BUI Restoration Target

BUI 10: Beach Closings (Recreation Use)

IJC Listing Guideline

An impairment will be listed when waters, which are commonly used for total-body contact or partial-body contact recreation, exceed standards, objectives, or guidelines for such use.

State of Ohio Listing Guideline

This beneficial use shall be listed as impaired if any of the following occur:

Public Bathing Beaches:

Bathing beach advisories are posted for more than 10 percent of the recreational season due to bacterial contamination (*E. coli*) OR advisories are posted for more than 10 percent of the recreational season for due to algal toxins. **OR**

Primary Contact Recreation (Paddling Streams):

Ohio Dept. of Natural Resources designated Paddling Streams that are within the AOC are included on Ohio's most recent Clean Water Act Section 303(d) list of impaired waters for recreational use due to bacterial contamination (*E. coli*) AND combined sewer overflows (CSOs) are either not present or not being addressed. **OR**

Chemical Contaminant (all waters):

A state or local government agency has issued a warning to avoid contact with the water due to the presence of a chemical of concern, such as PCB or PAH.

Note

- Ohio's water quality standards define the recreation season as May 1 through October 31, though Lake Erie beach monitoring typically is focused between Memorial Day and Labor Day weekends. The recreation season applies only to the public bathing beaches and designated paddling streams, not the Chemical Contaminant condition.

State of Ohio Restoration Target

This beneficial use shall be considered restored when the following conditions are met for public bathing beaches, designated paddling streams and chemical contaminant contact advisories:

Public Bathing Beaches:

This BUI will be considered restored when posted contact advisory days due to bacterial contamination (*E. coli*) do not exceed 10 percent (or 19 days) of the recreation season; AND posted recreational public health advisory days due to algal toxins do not exceed 10 percent (or 19 days) of the recreation season. This target must be met in 3 out of the most recent 5 years; **OR**

In cases where public bathing beaches within the AOC have posted contact advisory days for either bacterial contamination (*E. coli*) or algal toxins that exceed 10 percent of the recreation season and Combined Sewer Overflows (CSOs) are the primary cause, the BUI will be considered restored when the bacterial impacts from CSOs are being addressed under an approved long-term control plan or other legally-binding document.

Primary Contact Recreation (Paddling Streams):

No Ohio Dept. of Natural Resources designated Paddling Stream within the AOC is included on Ohio's most recent 303(d) list of impaired waters due to bacterial contamination (*E. coli*) **OR**

If an Ohio Dept. of Natural Resources designated Paddling Stream within the AOC is on the list of non-attaining waters because of bacterial contamination (*E. coli*) and the presence of Combined Sewer Overflows (CSOs) are the primary cause, this BUI will be considered restored when the bacterial impacts from CSOs are being addressed under an approved long-term control plan or other legally-binding document; **AND**

If an Ohio Dept. of Natural Resources designated Paddling Stream within the AOC is on the list of non-attaining waters because of bacterial contamination (*E. coli*) and the presence of non-point source pollution is the primary cause, this BUI will be considered restored when a TMDL is approved and the State and RAP can document that the level of bacterial contamination is not significantly worse than similar watersheds.

Chemical Contaminant (all waters):

No local or state contact advisories related to the presence of a chemical contaminant exist.

Note

- In Ohio, popular paddling streams with identified public access points have been designated by the Ohio Dept. of Natural Resources as Paddling Streams. This designation extends from the most upstream identified public access point to the mouth. These paddling stream segments are defined by the Ohio Dept. of Natural Resources and, in most cases; do not include the entirety of any Ohio AOC.
- For Cuyahoga AOC beaches, bacteriological sampling data may be used in lieu of advisory data if sampling was conducted 7 days per week during the entire sampling season. Exceedances of the Beach Action Value will be counted as Advisory Days if using bacteriological sampling data.
- This will only apply for the Cuyahoga Beaches, but it will help simplify the removal report.
- The recreational season is designated as May 1 to October 31.

Potential Data Sources

- Ohio EPA and other local bacteria surveys
- Ohio EPA CSO/SSO database
- State and local algal toxin monitoring/contact advisory postings
- ODH BeachGuard website: publicapps.odh.ohio.gov/BeachGuardPublic/Default.aspx
- Ohio EPA Harmful Algal Bloom (HAB) website: epa.ohio.gov/habalgae.aspx
- Local Long-Term Control Plan computer modeling or Ohio EPA TSD/TMDL modeling

Rationale

Based on the IJC listing guideline, it is appropriate and protective of human health to include both public beaches and primary contact recreation waters. Ohio water quality standards for recreational use have changed since the previous targets were written; therefore, this target has been updated to reflect these changes. The AOC targets are directly tied to the advisories, so if the water quality standards used to list the advisories change, the BUI target is still viable.

When determining the status of the Algal Toxin Target condition it should be noted that once there is an exceedance of the cyanotoxin recreational threshold, a contact advisory is posted. It requires 2 consecutive weeks (14 days) below that threshold to remove a contact advisory. For purposes of calculating the number of advisory days, use the follow guidance:

- If the last weekly sample collected for a recreational season warrants an advisory, then 2 weeks (14 days) should be added to the total number of advisory days for that season or the number of days to the end of the recreational season, whichever is less.
- If the second to last weekly sample collected for a recreational season warrants an advisory and the last weekly sample does not, then 1 week (7 days) should be added to the total number of advisory days for that season or the number of days to the end of the recreational season, whichever is less.
- If data is not collected weekly, but shows a decline below threshold with subsequent samples, then 14 days should be added to the last date of exceedance or the number of days to the end of the recreational season, whichever is less.

This BUI should be applied only to public bathing beaches, including inland lake public beaches that are routinely monitored, and Ohio Dept. of Natural Resources designated Paddling Streams, as these are the areas that Ohio has determined to be heavily used or could support frequent primary contact activities. Appendix D contains a list of public bathing beaches and designated paddling streams in each AOC where this BUI applies.

Combining Ohio EPA's comprehensive stream monitoring and local health department monitoring data provides a comprehensive look at bacteria levels in waters across the AOCs and the state. Bacterial contamination represents a pervasive statewide problem and one that is exacerbated by weather. For example, in the 2012 Ohio Integrated Water Quality Monitoring and Assessment Report (which contains the 303(d) list of impaired waters), only 7% of the 12-digit assessment units attained the Recreation Use. Ohio has also completed a number of TMDLs to address bacteria impairments and additional assessments will be required in the future. As of 2012, TMDLs had been completed in 22% of assessment units and were needed in an additional 27%.

Sources of bacteria can include package plants, Combined Sewer Overflows (CSOs), Sanitary Sewer Overflows (SSOs), home sewage treatment systems (HSTSs), commercial on-site systems, land application of organic materials, storm water, concentrated animal feeding operations (CAFOs) and other livestock operations, and permitted wastewater treatment plants (WWTPs). These sources are present across Ohio AOCs, and the tools to manage and address each source range from regulatory to voluntary actions.

An evaluation of failing HSTSs in Ohio provides an illustration of how many of these sources are not unique to AOCs but represent basin-wide or statewide issues. According to the Ohio Department of Health Report (January 2013): *Household Sewage Treatment System Failures in Ohio*, approximately 31% of all household sewage treatment systems throughout the state are failing to some degree. This report provides a summary of local health department survey responses for the 2012 Clean Watershed Needs Survey.

The 2014 revised restoration targets for this BUI were designed to identify sources of contamination within the AOCs that represent extraordinary problems that can be addressed through implementation at the local level. It is also important to recognize the numerous ongoing efforts to address these widespread issues including Ohio's TMDL program, local health department efforts to identify and upgrade or replace failing septic systems, targeted state funding and programs to address unsewered areas, and non-point source reduction programs. Additionally, communities have made tremendous investments to address storm water and correct CSO/SSO issues and will continue to reduce sources of contamination as the long-term control plans are implemented.

Ohio's BUI Restoration Target for this BUI includes multiple conditions. Some conditions have multiple pathways for removal. If the primary cause of the impairment is believed to be due to CSOs or non-point sources of pollution, this cause must be documented before this pathway to BUI removal can be used. Ohio EPA and the local advisory committee will need to support the cause identification via computer modeling, or through other evidence, that clearly states and fully explains the cause of the impairment. Once the issue has been documented as the primary cause, and an approved LTCP or approved TMDLs are in place to address the issue, this BUI can be considered restored for this condition.

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Appendix B – 2019-2023 Ohio Lake Erie Central Basin Beach Advisories and Seasonal Geomeans

Beach	2019		2020		2021		2022		2023	
	Seasonal Geomean	Number of Advisory Days posted	Seasonal Geomean	Number of Advisory Days posted	Seasonal Geomean	Number of Advisory Days posted	Seasonal Geomean	Number of Advisory Days posted	Seasonal Geomean	Number of Advisory Days posted
Arcadia Beach	285	41	97	22	150	22	154	21	41	16
Bay Park Beach	35	14	15	3	24	3	68	22	125	19
Beulah Beach (Chappel Creek)	70	27	33	10	102	41	181	39	97	33
Cedar Point Chausee	25	6	28	10	28	13	44	15	36	4
Century*	117	43	41	19	101	35	61	30	42	26
Clarkwood	140	22	55	2	126	25	192	19	81	21
Clifton	80	21	44	17	119	44	100	32	69	28
Columbia Park	122	21	121	21	134	32	134	20	251	39
Community Park	86	31	21	12	26	19	61	26	40	23
Conneaut	21	2	39	2	28	8	104	15	47	2
Cranberry	25	15	17	4	37	24	59	12	33	17
Darby	105	33	68	24	354	65	184	53	170	36
Edgecliff	100	19	57	2	57	2	211	40	28	8
Edgewater*	57	19	31	16	34	11	35	17	44	28
Euclid State Park*	172	35	63	24	92	33	65	31	53	24
Fairport Harbor	31	5	17	3	34	14	19	7	20	7
Fichtel Creek (Heidelberg Beach)	46	24	33	10	28	25	55	18	49	15
Geneva State Park	13	5	29	2	30	0	31	9	29	19
Headlands West	57	18	32	9	37	6	31	16	43	21
Huntington	32	20	51	24	63	30	59	17	85	23
Huron River East (Nickel Plate Beach)	41	8	49	12	34	23	59	17	45	8
Huron River West (Lake Front Park)	71	16	83	28	222	60	262	57	161	37
Lakeshore Park	50	5	101	11	315	40	166	19	125	31
Lakeview*	139	34	87	18	254	67	332	59	158	43
Lakewood Beach Park	68	29	25	10	49	20	106	38	37	17
Moss Point	197	26	53	10	90	9	158	32	50	13

Beach	2019		2020		2021		2022		2023	
	Seasonal Geomean	Number of Advisory Days posted	Seasonal Geomean	Number of Advisory Days posted	Seasonal Geomean	Number of Advisory Days posted	Seasonal Geomean	Number of Advisory Days posted	Seasonal Geomean	Number of Advisory Days posted
Noble	127	17	94	10	67	13	212	45	92	19
Nokomis	181	46	82	24	118	34	109	36	40	24
Old Woman East (Oberlin Beach)	33	18	13	2	19	15	37	7	24	3
Old Woman West	17	9	13	8	21	9	36	7	18	5
Orchard Beach	54	20	29	13	80	37	79	19	81	13
Parklawn	51	6	30	0	95	4	59	12	104	12
Royal Acres	146	22	57	2	141	21	176	25	75	15
Sawmill Creek	23	6	27	6	44	14	110	34	45	11
Sherod Creek	95	34	66	23	88	40	91	33	158	31
Showse	55	25	21	5	19	8	44	22	19	13
Sims	196	26	116	15	221	35	349	41	142	16
Utopia	124	24	36	4	46	16	69	36	60	8
Vermilion East (Lagoons Beach)	98	27	44	27	115	39	102	36	50	8
Vermilion West (Main Street Beach)	96	32	71	22	98	39	102	22	143	36
Villa Angela*	158	41	74	27	90	35	82	34	55	29
Wagar	43	10	51	4	167	23	54	12	101	22
Walnut	13	0	24	2	22	7	55	13	7	2
Avg Seasonal Geomean - All	86		50		93		109		74	
Avg Seasonal Geomean - Non-AOC only	80		48		91		108		74	

* = AOC Beach

Appendix C – Cuyahoga River, Tinkers Creek, and Rocky River *E. coli* Concentrations

Stream	RM	Date	<i>E. coli</i> (MNP/100mL)	Notes
Tinkers	7	8/23/2017	1231	Wet Weather
Tinkers	7	6/20/2018	3304	Wet Weather
Tinkers	7	7/5/2018	4205	Wet Weather
Tinkers	7	7/18/2018	206	Wet Weather
Tinkers	7	7/26/2017	252	Dry Weather
Tinkers	7	8/2/2017	230	Dry Weather
Tinkers	7	8/9/2017	171	Dry Weather
Tinkers	7	8/16/2017	108	Dry Weather
Tinkers	7	6/27/2018	324	Dry Weather
Tinkers	7	7/11/2018	283	Dry Weather
Tinkers	6.32	5/29/2013	1100	Wet Weather
Tinkers	6.32	9/16/2013	510	Wet Weather
Tinkers	6.32	7/1/2014	200	Wet Weather
Tinkers	6.32	9/11/2012	320	Dry Weather
Tinkers	6.32	6/11/2014	200	Dry Weather
Tinkers	6.32	6/15/2015	840	Dry Weather
Tinkers	6.32	6/20/2016	120	Dry Weather
Tinkers	6.32	9/26/2016	63	Dry Weather
Tinkers	2.5	6/5/2018	288	Wet Weather
Tinkers	2.5	6/20/2018	1660	Wet Weather
Tinkers	2.5	6/29/2018	1350	Wet Weather
Tinkers	2.5	7/6/2018	14100	Wet Weather
Tinkers	2.5	7/18/2018	74	Wet Weather
Tinkers	2.5	8/8/2018	936	Wet Weather
Tinkers	2.5	8/10/2018	135	Wet Weather
Tinkers	2.5	8/23/2018	1724	Wet Weather

Stream	RM	Date	<i>E. coli</i> (MNP/100mL)	Notes
Rocky River EB	17.5	7/17/2019	8880	Wet Weather
Rocky River EB	17.5	6/24/2020	795	Wet Weather
Rocky River EB	17.5	6/19/2019	139	Dry Weather
Rocky River EB	17.5	6/26/2019	458	Dry Weather
Rocky River EB	17.5	7/2/2019	286	Dry Weather
Rocky River EB	17.5	7/10/2019	464	Dry Weather
Rocky River EB	17.5	6/17/2020	350	Dry Weather
Rocky River EB	17.5	7/1/2020	200	Dry Weather
Rocky River EB	17.5	7/8/2020	1190	Dry Weather
Rocky River EB	17.5	7/15/2020	806	Dry Weather
Rocky River EB	10	5/2/2012	170	Dry Weather
Rocky River EB	10	5/29/2012	302	Dry Weather
Rocky River EB	9	7/17/2019	19180	Wet Weather
Rocky River EB	9	5/2/2012	200	Dry Weather
Rocky River EB	9	5/29/2012	800	Dry Weather
Rocky River EB	9	6/19/2019	470	Dry Weather
Rocky River EB	9	6/26/2019	794	Dry Weather
Rocky River EB	9	7/2/2019	1130	Dry Weather
Rocky River EB	9	7/10/2019	449	Dry Weather
Rocky River EB	8.9	5/2/2012	250	Dry Weather
Rocky River EB	8.9	5/29/2012	840	Dry Weather
Rocky River EB	8.7	6/16/2021	1484	Dry Weather
Rocky River EB	8.7	6/23/2021	921	Dry Weather
Rocky River EB	8.7	6/30/2021	3450	Dry Weather
Rocky River EB	8.7	7/7/2021	308	Dry Weather
Rocky River EB	8.7	7/14/2021	2460	Dry Weather

Stream	RM	Date	E. coli (MNP/100mL)	Notes
Tinkers	2.5	7/20/2018	80	Dry Weather
Tinkers	2.5	8/16/2018	43	Dry Weather
Tinkers	2.25	8/23/2017	1170	Wet Weather
Tinkers	2.25	6/20/2018	1986	Wet Weather
Tinkers	2.25	7/5/2018	2235	Wet Weather
Tinkers	2.25	7/18/2018	135	Wet Weather
Tinkers	2.25	7/26/2017	131	Dry Weather
Tinkers	2.25	8/2/2017	76	Dry Weather
Tinkers	2.25	8/9/2017	90	Dry Weather
Tinkers	2.25	8/16/2017	54	Dry Weather
Tinkers	2.25	6/27/2018	188	Dry Weather
Tinkers	2.25	7/11/2018	209	Dry Weather
Tinkers	0.15	8/23/2017	2013	Wet Weather
Tinkers	0.15	6/20/2018	2166	Wet Weather
Tinkers	0.15	7/5/2018	7250	Wet Weather
Tinkers	0.15	7/18/2018	650	Wet Weather
Tinkers	0.15	7/26/2017	177	Dry Weather
Tinkers	0.15	8/2/2017	68	Dry Weather
Tinkers	0.15	8/9/2017	106	Dry Weather
Tinkers	0.15	8/16/2017	112	Dry Weather
Tinkers	0.15	6/27/2018	324	Dry Weather
Tinkers	0.15	7/11/2018	333	Dry Weather
Tinkers	0.1	6/5/2018	357	Wet Weather
Tinkers	0.1	6/20/2018	1930	Wet Weather
Tinkers	0.1	6/29/2018	1150	Wet Weather
Tinkers	0.1	7/18/2018	13000	Wet Weather
Tinkers	0.1	7/18/2018	480	Wet Weather
Tinkers	0.1	8/8/2018	87	Wet Weather
Tinkers	0.1	8/10/2018	1628	Wet Weather

Stream	RM	Date	E. coli (MNP/100mL)	Notes
Rocky River EB	7.3	5/2/2012	350	Dry Weather
Rocky River EB	7.3	5/29/2012	355	Dry Weather
Rocky River EB	6.4	5/2/2012	364	Dry Weather
Rocky River EB	6.4	5/2/2012	392	Dry Weather
Rocky River EB	6.4	5/29/2012	390	Dry Weather
Rocky River EB	6.25	7/17/2019	18180	Wet Weather
Rocky River EB	6.25	6/24/2020	3160	Wet Weather
Rocky River EB	6.25	6/19/2019	213	Dry Weather
Rocky River EB	6.25	6/26/2019	720	Dry Weather
Rocky River EB	6.25	7/2/2019	388	Dry Weather
Rocky River EB	6.25	7/10/2019	225	Dry Weather
Rocky River EB	6.25	6/17/2020	254	Dry Weather
Rocky River EB	6.25	7/1/2020	143	Dry Weather
Rocky River EB	6.25	7/8/2020	3160	Dry Weather
Rocky River EB	6.25	7/15/2020	234	Dry Weather
Rocky River EB	3.4	8/14/2012	867	Wet Weather
Rocky River EB	3.4	8/21/2012	967	Wet Weather
Rocky River EB	3.4	8/29/2012	517	Wet Weather
Rocky River EB	3.4	7/31/2012	200	Dry Weather
Rocky River EB	3.4	8/7/2012	200	Dry Weather
Rocky River EB	3.1	8/14/2012	1400	Wet Weather
Rocky River EB	3.1	8/21/2012	733	Wet Weather
Rocky River EB	3.1	8/29/2012	767	Wet Weather
Rocky River EB	3.1	7/31/2012	180	Dry Weather
Rocky River EB	3.1	8/7/2012	155	Dry Weather
Rocky River EB	3	5/2/2012	368	Dry Weather
Rocky River EB	3	5/29/2012	1140	Dry Weather
Rocky River EB	0.15	7/17/2019	20140	Wet Weather
Rocky River EB	0.15	6/24/2020	2000	Wet Weather

Stream	RM	Date	E. coli (MNP/100mL)	Notes
Tinkers	0.1	8/23/2018	151	Wet Weather
Tinkers	0.1	7/20/2018	179	Dry Weather
Tinkers	0.1	8/16/2018	359	Dry Weather

Stream	RM	Date	E. coli (MNP/100mL)	Notes
Rocky River EB	0.15	6/19/2019	634	Dry Weather
Rocky River EB	0.15	6/26/2019	1266	Dry Weather
Rocky River EB	0.15	7/2/2019	219	Dry Weather
Rocky River EB	0.15	7/10/2019	559	Dry Weather
Rocky River EB	0.15	6/17/2020	504	Dry Weather
Rocky River EB	0.15	7/1/2020	312	Dry Weather
Rocky River EB	0.15	7/8/2020	496	Dry Weather
Rocky River EB	0.15	7/15/2020	216	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Rocky River MB	10.5	8/15/2012	788	Wet Weather
Rocky River MB	10.2	8/15/2012	733	Wet Weather
Rocky River MB	0.9	9/30/2014	770	Wet Weather
Rocky River MB	8.3	9/30/2014	3702	Wet Weather
Rocky River MB	0.9	10/1/2014	2948	Wet Weather
Rocky River MB	0.9	10/2/2014	256	Wet Weather
Rocky River MB	2.5	5/12/2015	65700	Wet Weather
Rocky River MB	2.5	5/28/2015	5980	Wet Weather
Rocky River MB	2.5	6/1/2015	10414	Wet Weather
Rocky River MB	2.5	6/11/2015	884	Wet Weather
Rocky River MB	2.5	6/15/2015	1646	Wet Weather
Rocky River MB	2.5	6/24/2015	2578	Wet Weather
Rocky River MB	2.5	6/29/2015	2981	Wet Weather
Rocky River MB	2.5	7/8/2015	8660	Wet Weather
Rocky River MB	8.3	7/9/2015	3432	Wet Weather
Rocky River MB	0.9	7/9/2015	45400	Wet Weather
Rocky River MB	0.9	7/9/2015	10240	Wet Weather
Rocky River MB	8.3	7/9/2015	30000	Wet Weather
Rocky River MB	0.9	7/9/2015	22240	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	42.6	6/30/2017	80	Wet Weather
Cuyahoga River	42.6	6/13/2017	50	Dry Weather
Cuyahoga River	42.6	7/7/2017	5290	Dry Weather
Cuyahoga River	42.6	7/19/2017	60	Dry Weather
Cuyahoga River	42.6	8/7/2017	241	Dry Weather
Cuyahoga River	42.6	8/22/2017	550	Dry Weather
Cuyahoga River	42.2	6/12/2015	2600	Wet Weather
Cuyahoga River	42.2	6/15/2015	6100	Wet Weather
Cuyahoga River	42.2	6/29/2015	430	Wet Weather
Cuyahoga River	42.2	5/13/2016	2200	Wet Weather
Cuyahoga River	42.2	5/31/2016	31	Wet Weather
Cuyahoga River	42.2	6/6/2016	1000	Wet Weather
Cuyahoga River	42.2	6/23/2016	9200	Wet Weather
Cuyahoga River	42.2	7/14/2016	14000	Wet Weather
Cuyahoga River	42.2	6/4/2018	37	Wet Weather
Cuyahoga River	42.2	9/11/2012	300	Dry Weather
Cuyahoga River	42.2	9/16/2013	260	Dry Weather
Cuyahoga River	42.2	6/11/2014	230	Dry Weather
Cuyahoga River	42.2	7/1/2014	130	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Rocky River MB	8.3	7/10/2015	3692	Wet Weather
Rocky River MB	8.3	7/10/2015	3603	Wet Weather
Rocky River MB	0.9	7/10/2015	4626	Wet Weather
Rocky River MB	8.3	7/11/2015	484	Wet Weather
Rocky River MB	8.3	7/11/2015	363	Wet Weather
Rocky River MB	0.9	7/11/2015	442	Wet Weather
Rocky River MB	2.5	8/3/2015	522	Wet Weather
Rocky River MB	2.5	8/11/2015	10392	Wet Weather
Rocky River MB	2.5	8/19/2015	1548	Wet Weather
Rocky River MB	2.5	8/31/2015	524	Wet Weather
Rocky River MB	2.5	9/4/2015	19200	Wet Weather
Rocky River MB	2.5	9/14/2015	5500	Wet Weather
Rocky River MB	2.5	9/30/2015	1467	Wet Weather
Rocky River MB	2.5	10/5/2015	72	Wet Weather
Rocky River MB	2.5	10/28/2015	5041	Wet Weather
Rocky River MB	2.5	5/2/2016	6216	Wet Weather
Rocky River MB	2.5	5/13/2016	4372	Wet Weather
Rocky River MB	2.5	6/6/2016	1091	Wet Weather
Rocky River MB	2.5	6/17/2016	10650	Wet Weather
Rocky River MB	2.5	6/23/2016	319	Wet Weather
Rocky River MB	2.5	7/8/2016	2050	Wet Weather
Rocky River MB	2.5	7/18/2016	4276	Wet Weather
Rocky River MB	2.5	8/1/2016	3192	Wet Weather
Rocky River MB	2.5	8/10/2016	9372	Wet Weather
Rocky River MB	2.5	8/25/2016	2824	Wet Weather
Rocky River MB	2.5	9/9/2016	754	Wet Weather
Rocky River MB	2.5	9/19/2016	196	Wet Weather
Rocky River MB	2.5	9/29/2016	1222	Wet Weather
Rocky River MB	2.5	10/20/2016	2472	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	42.2	5/26/2016	78	Dry Weather
Cuyahoga River	42.2	6/13/2016	130	Dry Weather
Cuyahoga River	42.2	6/20/2016	150	Dry Weather
Cuyahoga River	42.2	6/30/2016	120	Dry Weather
Cuyahoga River	42.2	7/18/2016	13000	Dry Weather
Cuyahoga River	42.2	7/26/2016	480	Dry Weather
Cuyahoga River	42.2	8/1/2016	1100	Dry Weather
Cuyahoga River	42.2	8/18/2016	130	Dry Weather
Cuyahoga River	42.2	9/26/2016	230	Dry Weather
Cuyahoga River	39.7	6/30/2017	1720	Wet Weather
Cuyahoga River	39.7	6/13/2017	125	Dry Weather
Cuyahoga River	39.7	7/7/2017	24200	Dry Weather
Cuyahoga River	39.7	7/19/2017	108	Dry Weather
Cuyahoga River	39.7	8/7/2017	613	Dry Weather
Cuyahoga River	39.7	8/22/2017	285	Dry Weather
Cuyahoga River	37.22	6/11/2013	880	Wet Weather
Cuyahoga River	37.22	7/12/2013	1500	Wet Weather
Cuyahoga River	37.22	7/25/2013	530	Wet Weather
Cuyahoga River	37.22	8/2/2013	180	Wet Weather
Cuyahoga River	37.22	6/12/2015	1300	Wet Weather
Cuyahoga River	37.22	6/29/2015	510	Wet Weather
Cuyahoga River	37.22	5/13/2016	1600	Wet Weather
Cuyahoga River	37.22	5/31/2016	55	Wet Weather
Cuyahoga River	37.22	6/6/2016	930	Wet Weather
Cuyahoga River	37.22	6/23/2016	5500	Wet Weather
Cuyahoga River	37.22	7/14/2016	8700	Wet Weather
Cuyahoga River	37.22	5/20/2013	120	Dry Weather
Cuyahoga River	37.22	6/5/2013	330	Dry Weather
Cuyahoga River	37.22	8/7/2013	180	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Rocky River MB	2.5	10/27/2016	1769	Wet Weather
Rocky River MB	2.5	5/2/2017	4726	Wet Weather
Rocky River MB	2.5	5/5/2017	2494	Wet Weather
Rocky River MB	2.5	5/22/2017	18056	Wet Weather
Rocky River MB	2.5	5/25/2017	735	Wet Weather
Rocky River MB	2.5	5/30/2017	6298	Wet Weather
Rocky River MB	8.3	6/15/2017	7280	Wet Weather
Rocky River MB	2.5	6/15/2017	4120	Wet Weather
Rocky River MB	8.3	6/21/2017	596	Wet Weather
Rocky River MB	2.5	6/21/2017	196	Wet Weather
Rocky River MB	8.3	7/12/2017	1700	Wet Weather
Rocky River MB	2.5	7/12/2017	3028	Wet Weather
Rocky River MB	2.5	7/14/2017	2408	Wet Weather
Rocky River MB	2.5	7/24/2017	198	Wet Weather
Rocky River MB	2.5	8/4/2017	3092	Wet Weather
Rocky River MB	2.5	8/23/2017	364	Wet Weather
Rocky River MB	2.5	9/5/2017	833	Wet Weather
Rocky River MB	2.5	10/9/2017	21870	Wet Weather
Rocky River MB	2.5	10/12/2017	428	Wet Weather
Rocky River MB	2.5	10/30/2017	344	Wet Weather
Rocky River MB	2.5	5/3/2018	795	Wet Weather
Rocky River MB	2.5	5/14/2018	8440	Wet Weather
Rocky River MB	2.5	5/21/2018	1892	Wet Weather
Rocky River MB	2.5	5/23/2018	8679	Wet Weather
Rocky River MB	2.5	6/4/2018	3460	Wet Weather
Rocky River MB	2.5	6/11/2018	20920	Wet Weather
Rocky River MB	2.5	6/19/2018	30300	Wet Weather
Rocky River MB	2.5	6/25/2018	241	Wet Weather
Rocky River MB	2.5	6/28/2018	1227	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	37.22	6/12/2014	150	Dry Weather
Cuyahoga River	37.22	5/26/2016	97	Dry Weather
Cuyahoga River	37.22	6/13/2016	120	Dry Weather
Cuyahoga River	37.22	6/30/2016	88	Dry Weather
Cuyahoga River	37.22	7/18/2016	760	Dry Weather
Cuyahoga River	37.22	7/26/2016	440	Dry Weather
Cuyahoga River	37.22	8/1/2016	1000	Dry Weather
Cuyahoga River	37.22	8/18/2016	560	Dry Weather
Cuyahoga River	35.31	6/11/2013	1100	Wet Weather
Cuyahoga River	35.31	7/12/2013	1700	Wet Weather
Cuyahoga River	35.31	7/25/2013	780	Wet Weather
Cuyahoga River	35.31	6/12/2015	3500	Wet Weather
Cuyahoga River	35.31	6/29/2015	520	Wet Weather
Cuyahoga River	35.31	5/13/2016	6000	Wet Weather
Cuyahoga River	35.31	5/31/2016	58	Wet Weather
Cuyahoga River	35.31	6/6/2016	810	Wet Weather
Cuyahoga River	35.31	6/23/2016	13000	Wet Weather
Cuyahoga River	35.31	7/14/2016	26000	Wet Weather
Cuyahoga River	35.31	5/20/2013	74	Dry Weather
Cuyahoga River	35.31	6/5/2013	370	Dry Weather
Cuyahoga River	35.31	8/7/2013	100	Dry Weather
Cuyahoga River	35.31	6/12/2014	120	Dry Weather
Cuyahoga River	35.31	5/26/2016	80	Dry Weather
Cuyahoga River	35.31	6/13/2016	140	Dry Weather
Cuyahoga River	35.31	6/30/2016	140	Dry Weather
Cuyahoga River	35.31	7/18/2016	1500	Dry Weather
Cuyahoga River	35.31	7/26/2016	880	Dry Weather
Cuyahoga River	35.31	8/1/2016	1600	Dry Weather
Cuyahoga River	35.31	8/18/2016	630	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Rocky River MB	2.5	7/5/2018	3460	Wet Weather
Rocky River MB	2.5	7/6/2018	24460	Wet Weather
Rocky River MB	2.5	7/17/2018	2920	Wet Weather
Rocky River MB	2.5	7/24/2018	10580	Wet Weather
Rocky River MB	2.5	7/27/2018	9850	Wet Weather
Rocky River MB	2.5	8/7/2018	49400	Wet Weather
Rocky River MB	2.5	8/8/2018	15250	Wet Weather
Rocky River MB	2.5	8/22/2018	8750	Wet Weather
Rocky River MB	2.5	8/30/2018	2576	Wet Weather
Rocky River MB	2.5	9/10/2018	9250	Wet Weather
Rocky River MB	2.5	9/25/2018	4165	Wet Weather
Rocky River MB	2.5	9/26/2018	34450	Wet Weather
Rocky River MB	2.5	10/8/2018	4250	Wet Weather
Rocky River MB	2.5	10/15/2018	299	Wet Weather
Rocky River MB	2.5	10/22/2018	564	Wet Weather
Rocky River MB	2.5	10/29/2018	16400	Wet Weather
Rocky River MB	2.5	5/29/2019	34480	Wet Weather
Rocky River MB	2.5	6/18/2019	2982	Wet Weather
Rocky River MB	4.8	6/18/2019	2443	Wet Weather
Rocky River MB	8.3	6/18/2019	1946	Wet Weather
Rocky River MB	10.2	6/18/2019	2388	Wet Weather
Rocky River MB	11.85	6/18/2019	1476	Wet Weather
Rocky River MB	2.5	6/25/2019	11620	Wet Weather
Rocky River MB	4.8	6/25/2019	8820	Wet Weather
Rocky River MB	8.3	6/25/2019	12760	Wet Weather
Rocky River MB	10.2	6/25/2019	12100	Wet Weather
Rocky River MB	11.85	6/25/2019	14520	Wet Weather
Rocky River MB	2.5	7/16/2019	2290	Wet Weather
Rocky River MB	4.8	7/16/2019	4200	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	34.7	6/11/2013	680	Wet Weather
Cuyahoga River	34.7	7/12/2013	460	Wet Weather
Cuyahoga River	34.7	7/25/2013	4000	Wet Weather
Cuyahoga River	34.7	8/2/2013	490	Wet Weather
Cuyahoga River	34.7	5/20/2013	41	Dry Weather
Cuyahoga River	34.7	6/5/2013	280	Dry Weather
Cuyahoga River	34.7	8/7/2013	81	Dry Weather
Cuyahoga River	33.8	6/12/2014	88	Dry Weather
Cuyahoga River	33.2	6/11/2013	1200	Wet Weather
Cuyahoga River	33.2	7/12/2013	930	Wet Weather
Cuyahoga River	33.2	7/25/2013	630	Wet Weather
Cuyahoga River	33.2	8/2/2013	140	Wet Weather
Cuyahoga River	33.2	6/12/2015	3300	Wet Weather
Cuyahoga River	33.2	6/29/2015	880	Wet Weather
Cuyahoga River	33.2	5/13/2016	120	Wet Weather
Cuyahoga River	33.2	5/31/2016	140	Wet Weather
Cuyahoga River	33.2	6/6/2016	1000	Wet Weather
Cuyahoga River	33.2	6/23/2016	25000	Wet Weather
Cuyahoga River	33.2	7/14/2016	19000	Wet Weather
Cuyahoga River	33.2	6/30/2017	80	Wet Weather
Cuyahoga River	33.2	5/20/2013	63	Dry Weather
Cuyahoga River	33.2	6/5/2013	330	Dry Weather
Cuyahoga River	33.2	8/7/2013	140	Dry Weather
Cuyahoga River	33.2	6/12/2014	170	Dry Weather
Cuyahoga River	33.2	5/26/2016	32	Dry Weather
Cuyahoga River	33.2	6/13/2016	110	Dry Weather
Cuyahoga River	33.2	6/30/2016	210	Dry Weather
Cuyahoga River	33.2	7/18/2016	340	Dry Weather
Cuyahoga River	33.2	7/26/2016	660	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Rocky River MB	8.3	7/16/2019	8650	Wet Weather
Rocky River MB	10.2	7/16/2019	1377	Wet Weather
Rocky River MB	11.85	7/16/2019	2008	Wet Weather
Rocky River MB	2.5	7/21/2020	1513	Wet Weather
Rocky River MB	4.8	7/21/2020	176	Wet Weather
Rocky River MB	8.3	7/21/2020	152	Wet Weather
Rocky River MB	10.2	7/21/2020	236	Wet Weather
Rocky River MB	11.85	7/21/2020	300	Wet Weather
Rocky River MB	11.85	7/28/2020	8180	Wet Weather
Rocky River MB	10.2	7/28/2020	7460	Wet Weather
Rocky River MB	8.3	7/28/2020	5980	Wet Weather
Rocky River MB	4.8	7/28/2020	5440	Wet Weather
Rocky River MB	2.5	7/28/2020	4860	Wet Weather
Rocky River MB	2.5	8/4/2020	11080	Wet Weather
Rocky River MB	4.8	8/4/2020	11960	Wet Weather
Rocky River MB	8.3	8/4/2020	10420	Wet Weather
Rocky River MB	10.2	8/4/2020	12480	Wet Weather
Rocky River MB	11.85	8/4/2020	6989	Wet Weather
Rocky River MB	11.85	8/18/2020	495	Wet Weather
Rocky River MB	10.2	8/18/2020	528	Wet Weather
Rocky River MB	8.3	8/18/2020	285	Wet Weather
Rocky River MB	4.8	8/18/2020	430	Wet Weather
Rocky River MB	2.5	8/18/2020	559	Wet Weather
Rocky River MB	10.2	7/25/2012	135	Dry Weather
Rocky River MB	10.5	7/25/2012	105	Dry Weather
Rocky River MB	10.5	8/1/2012	290	Dry Weather
Rocky River MB	10.2	8/1/2012	391	Dry Weather
Rocky River MB	10.5	8/8/2012	145	Dry Weather
Rocky River MB	10.2	8/8/2012	170	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	33.2	8/1/2016	3900	Dry Weather
Cuyahoga River	33.2	8/18/2016	1200	Dry Weather
Cuyahoga River	33.2	6/13/2017	50	Dry Weather
Cuyahoga River	33.2	7/7/2017	5290	Dry Weather
Cuyahoga River	33.2	7/19/2017	118	Dry Weather
Cuyahoga River	33.2	8/7/2017	727	Dry Weather
Cuyahoga River	33.2	8/22/2017	215	Dry Weather
Cuyahoga River	29.08	6/11/2013	2000	Wet Weather
Cuyahoga River	29.08	7/12/2013	990	Wet Weather
Cuyahoga River	29.08	7/25/2013	780	Wet Weather
Cuyahoga River	29.08	8/2/2013	190	Wet Weather
Cuyahoga River	29.08	6/12/2015	5000	Wet Weather
Cuyahoga River	29.08	6/29/2015	960	Wet Weather
Cuyahoga River	29.08	5/13/2016	650	Wet Weather
Cuyahoga River	29.08	5/31/2016	94	Wet Weather
Cuyahoga River	29.08	6/6/2016	2700	Wet Weather
Cuyahoga River	29.08	6/23/2016	3300	Wet Weather
Cuyahoga River	29.08	7/14/2016	10000	Wet Weather
Cuyahoga River	29.08	5/20/2013	20	Dry Weather
Cuyahoga River	29.08	6/5/2013	300	Dry Weather
Cuyahoga River	29.08	8/7/2013	88	Dry Weather
Cuyahoga River	29.08	6/12/2014	180	Dry Weather
Cuyahoga River	29.08	5/26/2016	94	Dry Weather
Cuyahoga River	29.08	6/13/2016	110	Dry Weather
Cuyahoga River	29.08	6/30/2016	110	Dry Weather
Cuyahoga River	29.08	7/18/2016	730	Dry Weather
Cuyahoga River	29.08	7/26/2016	960	Dry Weather
Cuyahoga River	29.08	8/1/2016	3200	Dry Weather
Cuyahoga River	29.08	8/18/2016	890	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Rocky River MB	10.5	8/22/2012	195	Dry Weather
Rocky River MB	10.2	8/22/2012	255	Dry Weather
Rocky River MB	0.5	7/25/2014	68	Dry Weather
Rocky River MB	8.3	9/4/2014	312	Dry Weather
Rocky River MB	0.9	10/3/2014	114	Dry Weather
Rocky River MB	8.3	7/12/2015	280	Dry Weather
Rocky River MB	0.9	7/12/2015	326	Dry Weather
Rocky River MB	8.3	7/12/2015	189	Dry Weather
Rocky River MB	2.5	6/19/2017	2083	Dry Weather
Rocky River MB	2.5	6/26/2017	189	Dry Weather
Rocky River MB	8.3	6/28/2017	194	Dry Weather
Rocky River MB	2.5	6/28/2017	184	Dry Weather
Rocky River MB	2.5	6/30/2017	3409	Dry Weather
Rocky River MB	8.3	7/5/2017	378	Dry Weather
Rocky River MB	2.5	7/5/2017	940	Dry Weather
Rocky River MB	2.5	7/7/2017	11775	Dry Weather
Rocky River MB	2.5	6/21/2019	19775	Dry Weather
Rocky River MB	2.5	7/2/2019	206	Dry Weather
Rocky River MB	4.8	7/2/2019	254	Dry Weather
Rocky River MB	8.3	7/2/2019	180	Dry Weather
Rocky River MB	10.2	7/2/2019	212	Dry Weather
Rocky River MB	11.85	7/2/2019	368	Dry Weather
Rocky River MB	2.5	7/5/2019	6240	Dry Weather
Rocky River MB	2.5	7/9/2019	263	Dry Weather
Rocky River MB	4.8	7/9/2019	304	Dry Weather
Rocky River MB	8.3	7/9/2019	4570	Dry Weather
Rocky River MB	10.2	7/9/2019	4280	Dry Weather
Rocky River MB	11.85	7/9/2019	632	Dry Weather
Rocky River MB	2.5	8/11/2020	135	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	26.5	6/11/2013	2900	Wet Weather
Cuyahoga River	26.5	7/12/2013	1200	Wet Weather
Cuyahoga River	26.5	7/25/2013	650	Wet Weather
Cuyahoga River	26.5	8/2/2013	180	Wet Weather
Cuyahoga River	26.5	6/12/2015	8700	Wet Weather
Cuyahoga River	26.5	6/29/2015	880	Wet Weather
Cuyahoga River	26.5	5/13/2016	7300	Wet Weather
Cuyahoga River	26.5	5/31/2016	73	Wet Weather
Cuyahoga River	26.5	6/6/2016	2600	Wet Weather
Cuyahoga River	26.5	6/23/2016	1400	Wet Weather
Cuyahoga River	26.5	7/14/2016	3300	Wet Weather
Cuyahoga River	26.5	6/30/2017	142	Wet Weather
Cuyahoga River	26.5	5/20/2013	86	Dry Weather
Cuyahoga River	26.5	6/5/2013	330	Dry Weather
Cuyahoga River	26.5	8/7/2013	96	Dry Weather
Cuyahoga River	26.5	6/12/2014	160	Dry Weather
Cuyahoga River	26.5	5/26/2016	130	Dry Weather
Cuyahoga River	26.5	6/13/2016	150	Dry Weather
Cuyahoga River	26.5	6/30/2016	77	Dry Weather
Cuyahoga River	26.5	7/18/2016	840	Dry Weather
Cuyahoga River	26.5	7/26/2016	790	Dry Weather
Cuyahoga River	26.5	8/1/2016	5600	Dry Weather
Cuyahoga River	26.5	8/18/2016	800	Dry Weather
Cuyahoga River	26.5	6/13/2017	96	Dry Weather
Cuyahoga River	26.5	7/7/2017	179	Dry Weather
Cuyahoga River	26.5	7/19/2017	133	Dry Weather
Cuyahoga River	26.5	8/7/2017	411	Dry Weather
Cuyahoga River	26.5	8/22/2017	157	Dry Weather
Cuyahoga River	24.1	6/11/2013	3900	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Rocky River MB	4.8	8/11/2020	189	Dry Weather
Rocky River MB	8.3	8/11/2020	131	Dry Weather
Rocky River MB	10.2	8/11/2020	150	Dry Weather
Rocky River MB	11.85	8/11/2020	238	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	24.1	7/12/2013	2000	Wet Weather
Cuyahoga River	24.1	7/25/2013	660	Wet Weather
Cuyahoga River	24.1	8/2/2013	290	Wet Weather
Cuyahoga River	24.1	6/12/2015	24000	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	24.1	6/29/2015	1100	Wet Weather
Cuyahoga River	24.1	5/13/2016	1800	Wet Weather
Cuyahoga River	24.1	5/31/2016	73	Wet Weather
Cuyahoga River	24.1	6/6/2016	2000	Wet Weather
Cuyahoga River	24.1	6/23/2016	1200	Wet Weather
Cuyahoga River	24.1	7/14/2016	1300	Wet Weather
Cuyahoga River	24.1	7/18/2016	220	Wet Weather
Cuyahoga River	24.1	8/18/2016	1300	Wet Weather
Cuyahoga River	24.1	6/30/2017	733	Wet Weather
Cuyahoga River	24.1	7/7/2017	167	Wet Weather
Cuyahoga River	24.1	5/20/2013	52	Dry Weather
Cuyahoga River	24.1	6/5/2013	380	Dry Weather
Cuyahoga River	24.1	8/7/2013	1100	Dry Weather
Cuyahoga River	24.1	6/12/2014	300	Dry Weather
Cuyahoga River	24.1	5/26/2016	32	Dry Weather
Cuyahoga River	24.1	6/13/2016	82	Dry Weather
Cuyahoga River	24.1	6/30/2016	77	Dry Weather
Cuyahoga River	24.1	7/26/2016	620	Dry Weather
Cuyahoga River	24.1	8/1/2016	4400	Dry Weather
Cuyahoga River	24.1	6/13/2017	64	Dry Weather
Cuyahoga River	24.1	7/19/2017	150	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	10.95	7/18/2017	563	Dry Weather
Cuyahoga River	10.95	7/18/2017	62	Dry Weather
Cuyahoga River	10.95	7/19/2017	141	Dry Weather
Cuyahoga River	10.95	8/1/2017	30	Dry Weather
Cuyahoga River	10.95	8/7/2017	148	Dry Weather
Cuyahoga River	10.95	8/15/2017	49	Dry Weather
Cuyahoga River	10.95	8/22/2017	138	Dry Weather
Cuyahoga River	10.95	9/19/2017	113	Dry Weather
Cuyahoga River	10.95	10/3/2017	46	Dry Weather
Cuyahoga River	10.95	10/17/2017	147	Dry Weather
Cuyahoga River	10.95	5/1/2018	32	Dry Weather
Cuyahoga River	10.95	7/3/2018	1506	Dry Weather
Cuyahoga River	10.95	9/4/2018	524	Dry Weather
Cuyahoga River	10.95	9/18/2018	118	Dry Weather
Cuyahoga River	10.95	10/2/2018	214	Dry Weather
Cuyahoga River	10.95	10/16/2018	154	Dry Weather
Cuyahoga River	10.95	5/7/2019	63	Dry Weather
Cuyahoga River	10.95	5/21/2019	100	Dry Weather
Cuyahoga River	10.95	5/21/2019	158	Dry Weather
Cuyahoga River	10.95	7/2/2019	228	Dry Weather
Cuyahoga River	10.95	7/16/2019	264	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	24.1	8/7/2017	432	Dry Weather
Cuyahoga River	24.1	8/22/2017	206	Dry Weather
Cuyahoga River	20.8	6/12/2015	1100	Wet Weather
Cuyahoga River	20.8	6/29/2015	1090	Wet Weather
Cuyahoga River	20.8	5/13/2016	2800	Wet Weather
Cuyahoga River	20.8	5/31/2016	100	Wet Weather
Cuyahoga River	20.8	6/6/2016	1200	Wet Weather
Cuyahoga River	20.8	6/23/2016	380	Wet Weather
Cuyahoga River	20.8	7/14/2016	1200	Wet Weather
Cuyahoga River	20.8	7/18/2016	220	Wet Weather
Cuyahoga River	20.8	8/18/2016	1600	Wet Weather
Cuyahoga River	20.8	6/30/2017	2210	Wet Weather
Cuyahoga River	20.8	7/7/2017	457	Wet Weather
Cuyahoga River	20.8	6/12/2014	130	Dry Weather
Cuyahoga River	20.8	5/26/2016	43	Dry Weather
Cuyahoga River	20.8	6/13/2016	110	Dry Weather
Cuyahoga River	20.8	6/30/2016	120	Dry Weather
Cuyahoga River	20.8	7/26/2016	490	Dry Weather
Cuyahoga River	20.8	8/1/2016	3400	Dry Weather
Cuyahoga River	20.8	8/8/2016	34	Dry Weather
Cuyahoga River	20.8	6/13/2017	84	Dry Weather
Cuyahoga River	20.8	7/19/2017	115	Dry Weather
Cuyahoga River	20.8	8/7/2017	328	Dry Weather
Cuyahoga River	20.8	8/22/2017	122	Dry Weather
Cuyahoga River	20.67	6/11/2013	5800	Wet Weather
Cuyahoga River	20.67	7/12/2013	2700	Wet Weather
Cuyahoga River	20.67	7/25/2013	700	Wet Weather
Cuyahoga River	20.67	8/2/2013	150	Wet Weather
Cuyahoga River	20.67	6/12/2015	580	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	10.95	8/6/2019	158	Dry Weather
Cuyahoga River	10.95	9/3/2019	330	Dry Weather
Cuyahoga River	10.95	9/17/2019	508	Dry Weather
Cuyahoga River	10.95	10/1/2019	172	Dry Weather
Cuyahoga River	10.95	10/15/2019	34	Dry Weather
Cuyahoga River	10.95	5/4/2020	292	Dry Weather
Cuyahoga River	10.95	6/1/2020	298	Dry Weather
Cuyahoga River	10.95	6/15/2020	133	Dry Weather
Cuyahoga River	10.95	7/1/2020	169	Dry Weather
Cuyahoga River	10.95	7/15/2020	148	Dry Weather
Cuyahoga River	10.95	9/1/2020	498	Dry Weather
Cuyahoga River	10.95	9/16/2020	249	Dry Weather
Cuyahoga River	10.95	5/5/2021	260	Dry Weather
Cuyahoga River	10.95	5/5/2021	435	Dry Weather
Cuyahoga River	10.95	5/17/2021	55	Dry Weather
Cuyahoga River	10.95	6/2/2021	194	Dry Weather
Cuyahoga River	10.95	6/15/2021	166	Dry Weather
Cuyahoga River	10.95	7/6/2021	141	Dry Weather
Cuyahoga River	10.95	8/2/2021	1414	Dry Weather
Cuyahoga River	10.95	8/16/2021	488	Dry Weather
Cuyahoga River	10.95	6/1/2022	84	Dry Weather
Cuyahoga River	10.95	8/1/2022	44	Dry Weather
Cuyahoga River	10.75	7/22/2013	360	Wet Weather
Cuyahoga River	10.75	7/29/2013	200	Wet Weather
Cuyahoga River	10.75	8/12/2013	370	Wet Weather
Cuyahoga River	10.75	7/29/2014	2220	Wet Weather
Cuyahoga River	10.75	7/29/2014	1784	Wet Weather
Cuyahoga River	10.75	8/5/2014	203	Wet Weather
Cuyahoga River	10.75	8/12/2014	5096	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	20.67	6/29/2015	1100	Wet Weather
Cuyahoga River	20.67	5/13/2016	4600	Wet Weather
Cuyahoga River	20.67	5/31/2016	81	Wet Weather
Cuyahoga River	20.67	6/6/2016	960	Wet Weather
Cuyahoga River	20.67	6/23/2016	440	Wet Weather
Cuyahoga River	20.67	7/14/2016	1400	Wet Weather
Cuyahoga River	20.67	7/18/2016	250	Wet Weather
Cuyahoga River	20.67	8/18/2016	2100	Wet Weather
Cuyahoga River	20.67	6/30/2017	1130	Wet Weather
Cuyahoga River	20.67	7/7/2017	142	Wet Weather
Cuyahoga River	20.67	5/20/2013	63	Dry Weather
Cuyahoga River	20.67	6/5/2013	360	Dry Weather
Cuyahoga River	20.67	8/7/2013	150	Dry Weather
Cuyahoga River	20.67	5/26/2016	5	Dry Weather
Cuyahoga River	20.67	6/13/2016	110	Dry Weather
Cuyahoga River	20.67	6/30/2016	160	Dry Weather
Cuyahoga River	20.67	7/26/2016	650	Dry Weather
Cuyahoga River	20.67	8/1/2016	5800	Dry Weather
Cuyahoga River	20.67	8/8/2016	44	Dry Weather
Cuyahoga River	20.67	6/13/2017	91	Dry Weather
Cuyahoga River	20.67	7/19/2017	133	Dry Weather
Cuyahoga River	20.67	8/7/2017	345	Dry Weather
Cuyahoga River	20.67	8/22/2017	79	Dry Weather
Cuyahoga River	17.3	6/30/2017	1120	Wet Weather
Cuyahoga River	17.3	7/7/2017	126	Wet Weather
Cuyahoga River	17.3	7/19/2017	105	Dry Weather
Cuyahoga River	17.3	8/7/2017	205	Dry Weather
Cuyahoga River	17.3	8/22/2017	120	Dry Weather
Cuyahoga River	16.2	7/22/2013	270	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	10.75	8/19/2014	312	Wet Weather
Cuyahoga River	10.75	8/4/2015	24	Wet Weather
Cuyahoga River	10.75	8/11/2015	12224	Wet Weather
Cuyahoga River	10.75	8/10/2016	6232	Wet Weather
Cuyahoga River	10.75	7/11/2017	19040	Wet Weather
Cuyahoga River	10.75	7/24/2018	833	Wet Weather
Cuyahoga River	10.75	7/31/2018	150	Wet Weather
Cuyahoga River	10.75	8/7/2018	7300	Wet Weather
Cuyahoga River	10.75	8/14/2018	668	Wet Weather
Cuyahoga River	10.75	8/21/2018	14860	Wet Weather
Cuyahoga River	10.75	7/23/2019	3440	Wet Weather
Cuyahoga River	10.75	7/30/2019	2326	Wet Weather
Cuyahoga River	10.75	8/20/2019	410	Wet Weather
Cuyahoga River	10.75	6/24/2020	1280	Wet Weather
Cuyahoga River	10.75	7/8/2020	8750	Wet Weather
Cuyahoga River	10.75	8/10/2021	15520	Wet Weather
Cuyahoga River	10.75	8/5/2013	540	Dry Weather
Cuyahoga River	10.75	8/19/2013	175	Dry Weather
Cuyahoga River	10.75	7/23/2014	149	Dry Weather
Cuyahoga River	10.75	7/21/2015	98	Dry Weather
Cuyahoga River	10.75	7/21/2015	116	Dry Weather
Cuyahoga River	10.75	7/28/2015	58	Dry Weather
Cuyahoga River	10.75	7/28/2015	84	Dry Weather
Cuyahoga River	10.75	8/18/2015	351	Dry Weather
Cuyahoga River	10.75	7/27/2016	450	Dry Weather
Cuyahoga River	10.75	8/3/2016	428	Dry Weather
Cuyahoga River	10.75	8/17/2016	336	Dry Weather
Cuyahoga River	10.75	8/24/2016	105	Dry Weather
Cuyahoga River	10.75	7/18/2017	318	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	16.2	7/29/2013	180	Wet Weather
Cuyahoga River	16.2	8/12/2013	380	Wet Weather
Cuyahoga River	16.2	7/29/2014	931	Wet Weather
Cuyahoga River	16.2	8/5/2014	308	Wet Weather
Cuyahoga River	16.2	8/12/2014	57650	Wet Weather
Cuyahoga River	16.2	8/19/2014	86	Wet Weather
Cuyahoga River	16.2	8/4/2015	61	Wet Weather
Cuyahoga River	16.2	8/11/2015	4722	Wet Weather
Cuyahoga River	16.2	8/10/2016	250	Wet Weather
Cuyahoga River	16.2	7/11/2017	25920	Wet Weather
Cuyahoga River	16.2	7/24/2018	554	Wet Weather
Cuyahoga River	16.2	7/31/2018	166	Wet Weather
Cuyahoga River	16.2	8/7/2018	4020	Wet Weather
Cuyahoga River	16.2	8/14/2018	1015	Wet Weather
Cuyahoga River	16.2	8/21/2018	2680	Wet Weather
Cuyahoga River	16.2	7/23/2019	2398	Wet Weather
Cuyahoga River	16.2	7/23/2019	1792	Wet Weather
Cuyahoga River	16.2	7/30/2019	254	Wet Weather
Cuyahoga River	16.2	8/20/2019	368	Wet Weather
Cuyahoga River	16.2	8/5/2013	360	Dry Weather
Cuyahoga River	16.2	8/19/2013	69	Dry Weather
Cuyahoga River	16.2	7/23/2014	170	Dry Weather
Cuyahoga River	16.2	7/23/2014	982	Dry Weather
Cuyahoga River	16.2	7/21/2015	166	Dry Weather
Cuyahoga River	16.2	7/28/2015	166	Dry Weather
Cuyahoga River	16.2	8/18/2015	1752	Dry Weather
Cuyahoga River	16.2	7/27/2016	377	Dry Weather
Cuyahoga River	16.2	8/3/2016	260	Dry Weather
Cuyahoga River	16.2	8/17/2016	500	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	10.75	7/25/2017	256	Dry Weather
Cuyahoga River	10.75	8/1/2017	34	Dry Weather
Cuyahoga River	10.75	8/8/2017	128	Dry Weather
Cuyahoga River	10.75	8/6/2019	170	Dry Weather
Cuyahoga River	10.75	8/13/2019	498	Dry Weather
Cuyahoga River	10.75	6/17/2020	106	Dry Weather
Cuyahoga River	10.75	7/1/2020	130	Dry Weather
Cuyahoga River	10.75	7/15/2020	284	Dry Weather
Cuyahoga River	10.75	7/20/2021	276	Dry Weather
Cuyahoga River	10.75	7/27/2021	111	Dry Weather
Cuyahoga River	10.75	8/3/2021	96	Dry Weather
Cuyahoga River	10.75	8/17/2021	435	Dry Weather
Cuyahoga River	10.3	6/30/2017	3280	Wet Weather
Cuyahoga River	10.3	7/7/2017	5170	Wet Weather
Cuyahoga River	10.3	7/19/2017	140	Dry Weather
Cuyahoga River	10.3	8/7/2017	161	Dry Weather
Cuyahoga River	10.3	8/22/2017	122	Dry Weather
Cuyahoga River	10.1	7/22/2013	270	Wet Weather
Cuyahoga River	10.1	7/29/2013	170	Wet Weather
Cuyahoga River	10.1	8/12/2013	350	Wet Weather
Cuyahoga River	10.1	7/29/2014	1884	Wet Weather
Cuyahoga River	10.1	8/5/2014	2667	Wet Weather
Cuyahoga River	10.1	8/12/2014	5926	Wet Weather
Cuyahoga River	10.1	8/19/2014	220	Wet Weather
Cuyahoga River	10.1	8/4/2015	35	Wet Weather
Cuyahoga River	10.1	8/11/2015	9666	Wet Weather
Cuyahoga River	10.1	8/10/2016	3962	Wet Weather
Cuyahoga River	10.1	7/11/2017	19890	Wet Weather
Cuyahoga River	10.1	7/24/2018	1273	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	16.2	8/24/2016	166	Dry Weather
Cuyahoga River	16.2	7/18/2017	222	Dry Weather
Cuyahoga River	16.2	7/25/2017	350	Dry Weather
Cuyahoga River	16.2	8/1/2017	70	Dry Weather
Cuyahoga River	16.2	8/8/2017	172	Dry Weather
Cuyahoga River	16.2	8/6/2019	132	Dry Weather
Cuyahoga River	16.2	8/13/2019	422	Dry Weather
Cuyahoga River	15.61	6/30/2017	1370	Wet Weather
Cuyahoga River	15.61	7/7/2017	276	Wet Weather
Cuyahoga River	15.61	7/19/2017	119	Dry Weather
Cuyahoga River	15.61	8/7/2017	201	Dry Weather
Cuyahoga River	15.61	8/22/2017	155	Dry Weather
Cuyahoga River	13.08	9/30/2014	3532	Wet Weather
Cuyahoga River	13.08	10/1/2014	4900	Wet Weather
Cuyahoga River	13.08	10/2/2014	1018	Wet Weather
Cuyahoga River	13.08	6/12/2015	190	Wet Weather
Cuyahoga River	13.08	6/15/2015	11000	Wet Weather
Cuyahoga River	13.08	7/9/2015	603	Wet Weather
Cuyahoga River	13.08	7/9/2015	1281	Wet Weather
Cuyahoga River	13.08	7/9/2015	19180	Wet Weather
Cuyahoga River	13.08	7/10/2015	4956	Wet Weather
Cuyahoga River	13.08	7/10/2015	3970	Wet Weather
Cuyahoga River	13.08	7/11/2015	518	Wet Weather
Cuyahoga River	13.08	7/11/2015	384	Wet Weather
Cuyahoga River	13.08	5/13/2016	4600	Wet Weather
Cuyahoga River	13.08	5/31/2016	210	Wet Weather
Cuyahoga River	13.08	6/6/2016	1700	Wet Weather
Cuyahoga River	13.08	6/23/2016	260	Wet Weather
Cuyahoga River	13.08	7/14/2016	4500	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	10.1	7/31/2018	164	Wet Weather
Cuyahoga River	10.1	8/7/2018	10150	Wet Weather
Cuyahoga River	10.1	8/14/2018	406	Wet Weather
Cuyahoga River	10.1	8/21/2018	17720	Wet Weather
Cuyahoga River	10.1	7/23/2019	2172	Wet Weather
Cuyahoga River	10.1	7/30/2019	2073	Wet Weather
Cuyahoga River	10.1	8/20/2019	222	Wet Weather
Cuyahoga River	10.1	6/24/2020	1263	Wet Weather
Cuyahoga River	10.1	7/8/2020	7300	Wet Weather
Cuyahoga River	10.1	8/10/2021	14660	Wet Weather
Cuyahoga River	10.1	8/5/2013	392	Dry Weather
Cuyahoga River	10.1	8/19/2013	115	Dry Weather
Cuyahoga River	10.1	7/23/2014	92	Dry Weather
Cuyahoga River	10.1	7/21/2015	186	Dry Weather
Cuyahoga River	10.1	7/28/2015	42	Dry Weather
Cuyahoga River	10.1	8/18/2015	429	Dry Weather
Cuyahoga River	10.1	7/27/2016	475	Dry Weather
Cuyahoga River	10.1	8/3/2016	296	Dry Weather
Cuyahoga River	10.1	8/17/2016	368	Dry Weather
Cuyahoga River	10.1	8/24/2016	102	Dry Weather
Cuyahoga River	10.1	7/18/2017	140	Dry Weather
Cuyahoga River	10.1	7/25/2017	269	Dry Weather
Cuyahoga River	10.1	8/1/2017	28	Dry Weather
Cuyahoga River	10.1	8/8/2017	250	Dry Weather
Cuyahoga River	10.1	8/6/2019	200	Dry Weather
Cuyahoga River	10.1	8/13/2019	230	Dry Weather
Cuyahoga River	10.1	6/17/2020	126	Dry Weather
Cuyahoga River	10.1	7/1/2020	228	Dry Weather
Cuyahoga River	10.1	7/15/2020	128	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	13.08	8/18/2016	4400	Wet Weather
Cuyahoga River	13.08	9/26/2016	670	Wet Weather
Cuyahoga River	13.08	6/30/2017	3330	Wet Weather
Cuyahoga River	13.08	7/7/2017	466	Wet Weather
Cuyahoga River	13.08	6/4/2018	52	Wet Weather
Cuyahoga River	13.08	6/24/2020	1236	Wet Weather
Cuyahoga River	13.08	6/24/2020	1010	Wet Weather
Cuyahoga River	13.08	7/8/2020	4900	Wet Weather
Cuyahoga River	13.08	8/10/2021	11660	Wet Weather
Cuyahoga River	13.08	8/10/2021	15520	Wet Weather
Cuyahoga River	13.08	9/11/2012	250	Dry Weather
Cuyahoga River	13.08	9/16/2013	350	Dry Weather
Cuyahoga River	13.08	6/11/2014	250	Dry Weather
Cuyahoga River	13.08	7/1/2014	230	Dry Weather
Cuyahoga River	13.08	7/25/2014	90	Dry Weather
Cuyahoga River	13.08	10/3/2014	294	Dry Weather
Cuyahoga River	13.08	7/12/2015	260	Dry Weather
Cuyahoga River	13.08	7/12/2015	418	Dry Weather
Cuyahoga River	13.08	5/26/2016	49	Dry Weather
Cuyahoga River	13.08	6/13/2016	43	Dry Weather
Cuyahoga River	13.08	6/20/2016	490	Dry Weather
Cuyahoga River	13.08	6/30/2016	93	Dry Weather
Cuyahoga River	13.08	7/26/2016	590	Dry Weather
Cuyahoga River	13.08	8/1/2016	6900	Dry Weather
Cuyahoga River	13.08	8/8/2016	39	Dry Weather
Cuyahoga River	13.08	7/19/2017	130	Dry Weather
Cuyahoga River	13.08	8/7/2017	166	Dry Weather
Cuyahoga River	13.08	8/22/2017	4600	Dry Weather
Cuyahoga River	13.08	6/17/2020	88	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	10.1	7/20/2021	345	Dry Weather
Cuyahoga River	10.1	7/20/2021	613	Dry Weather
Cuyahoga River	10.1	7/27/2021	155	Dry Weather
Cuyahoga River	10.1	8/3/2021	109	Dry Weather
Cuyahoga River	10.1	8/17/2021	387	Dry Weather
Cuyahoga River	9.78	6/4/2013	285	Wet Weather
Cuyahoga River	9.78	6/18/2013	250	Wet Weather
Cuyahoga River	9.78	9/3/2013	390	Wet Weather
Cuyahoga River	9.78	9/17/2013	285	Wet Weather
Cuyahoga River	9.78	10/1/2013	218	Wet Weather
Cuyahoga River	9.78	8/5/2014	192	Wet Weather
Cuyahoga River	9.78	8/19/2014	102	Wet Weather
Cuyahoga River	9.78	10/21/2014	5300	Wet Weather
Cuyahoga River	9.78	6/2/2015	1485	Wet Weather
Cuyahoga River	9.78	6/16/2015	14750	Wet Weather
Cuyahoga River	9.78	8/4/2015	42	Wet Weather
Cuyahoga River	9.78	9/15/2015	714	Wet Weather
Cuyahoga River	9.78	5/17/2016	196	Wet Weather
Cuyahoga River	9.78	6/7/2016	780	Wet Weather
Cuyahoga River	9.78	7/19/2016	278	Wet Weather
Cuyahoga River	9.78	8/16/2016	266	Wet Weather
Cuyahoga River	9.78	10/4/2016	568	Wet Weather
Cuyahoga River	9.78	5/2/2017	9100	Wet Weather
Cuyahoga River	9.78	6/20/2017	224	Wet Weather
Cuyahoga River	9.78	9/5/2017	1708	Wet Weather
Cuyahoga River	9.78	5/15/2018	2155	Wet Weather
Cuyahoga River	9.78	6/5/2018	1928	Wet Weather
Cuyahoga River	9.78	6/5/2018	1082	Wet Weather
Cuyahoga River	9.78	6/19/2018	25620	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	13.08	7/1/2020	148	Dry Weather
Cuyahoga River	13.08	7/15/2020	99	Dry Weather
Cuyahoga River	13.08	7/20/2021	411	Dry Weather
Cuyahoga River	13.08	7/27/2021	138	Dry Weather
Cuyahoga River	13.08	8/3/2021	119	Dry Weather
Cuyahoga River	13.08	8/17/2021	365	Dry Weather
Cuyahoga River	12.1	7/22/2013	325	Wet Weather
Cuyahoga River	12.1	7/29/2013	248	Wet Weather
Cuyahoga River	12.1	8/12/2013	380	Wet Weather
Cuyahoga River	12.1	7/29/2014	1937	Wet Weather
Cuyahoga River	12.1	8/5/2014	250	Wet Weather
Cuyahoga River	12.1	8/12/2014	15450	Wet Weather
Cuyahoga River	12.1	8/19/2014	118	Wet Weather
Cuyahoga River	12.1	8/4/2015	86	Wet Weather
Cuyahoga River	12.1	8/11/2015	15214	Wet Weather
Cuyahoga River	12.1	8/10/2016	1050	Wet Weather
Cuyahoga River	12.1	7/11/2017	12549	Wet Weather
Cuyahoga River	12.1	7/24/2018	700	Wet Weather
Cuyahoga River	12.1	7/31/2018	214	Wet Weather
Cuyahoga River	12.1	8/7/2018	5425	Wet Weather
Cuyahoga River	12.1	8/14/2018	330	Wet Weather
Cuyahoga River	12.1	8/21/2018	3120	Wet Weather
Cuyahoga River	12.1	8/5/2013	424	Dry Weather
Cuyahoga River	12.1	8/19/2013	70	Dry Weather
Cuyahoga River	12.1	7/23/2014	166	Dry Weather
Cuyahoga River	12.1	7/21/2015	169	Dry Weather
Cuyahoga River	12.1	7/28/2015	107	Dry Weather
Cuyahoga River	12.1	8/18/2015	532	Dry Weather
Cuyahoga River	12.1	7/27/2016	710	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	9.78	7/17/2018	5560	Wet Weather
Cuyahoga River	9.78	8/7/2018	6890	Wet Weather
Cuyahoga River	9.78	8/21/2018	9340	Wet Weather
Cuyahoga River	9.78	6/4/2019	534	Wet Weather
Cuyahoga River	9.78	6/18/2019	876	Wet Weather
Cuyahoga River	9.78	8/20/2019	890	Wet Weather
Cuyahoga River	9.78	5/20/2020	833	Wet Weather
Cuyahoga River	9.78	8/3/2020	668	Wet Weather
Cuyahoga River	9.78	8/17/2020	1596	Wet Weather
Cuyahoga River	9.78	10/15/2020	345	Wet Weather
Cuyahoga River	9.78	7/15/2021	517	Wet Weather
Cuyahoga River	9.78	9/1/2021	291	Wet Weather
Cuyahoga River	9.78	9/16/2021	816	Wet Weather
Cuyahoga River	9.78	10/4/2021	249	Wet Weather
Cuyahoga River	9.78	10/18/2021	517	Wet Weather
Cuyahoga River	9.78	5/2/2022	411	Wet Weather
Cuyahoga River	9.78	5/16/2022	1733	Wet Weather
Cuyahoga River	9.78	6/15/2022	276	Wet Weather
Cuyahoga River	9.78	7/5/2022	3683	Wet Weather
Cuyahoga River	9.78	7/15/2022	219	Wet Weather
Cuyahoga River	9.78	5/7/2013	40	Dry Weather
Cuyahoga River	9.78	5/21/2013	59	Dry Weather
Cuyahoga River	9.78	7/2/2013	245	Dry Weather
Cuyahoga River	9.78	7/16/2013	165	Dry Weather
Cuyahoga River	9.78	8/6/2013	110	Dry Weather
Cuyahoga River	9.78	8/20/2013	69	Dry Weather
Cuyahoga River	9.78	10/15/2013	120	Dry Weather
Cuyahoga River	9.78	5/6/2014	56	Dry Weather
Cuyahoga River	9.78	5/20/2014	238	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	12.1	8/3/2016	786	Dry Weather
Cuyahoga River	12.1	8/17/2016	533	Dry Weather
Cuyahoga River	12.1	8/24/2016	152	Dry Weather
Cuyahoga River	12.1	7/18/2017	241	Dry Weather
Cuyahoga River	12.1	7/18/2017	235	Dry Weather
Cuyahoga River	12.1	7/25/2017	301	Dry Weather
Cuyahoga River	12.1	8/1/2017	33	Dry Weather
Cuyahoga River	12.1	8/8/2017	178	Dry Weather
Cuyahoga River	11.95	7/23/2019	2303	Wet Weather
Cuyahoga River	11.95	7/30/2019	1280	Wet Weather
Cuyahoga River	11.95	7/30/2019	1100	Wet Weather
Cuyahoga River	11.95	8/20/2019	432	Wet Weather
Cuyahoga River	11.95	8/6/2019	96	Dry Weather
Cuyahoga River	11.95	8/13/2019	490	Dry Weather
Cuyahoga River	11.33	7/22/2013	320	Wet Weather
Cuyahoga River	11.33	7/29/2013	180	Wet Weather
Cuyahoga River	11.33	8/12/2013	375	Wet Weather
Cuyahoga River	11.33	7/29/2014	1361	Wet Weather
Cuyahoga River	11.33	8/5/2014	232	Wet Weather
Cuyahoga River	11.33	8/12/2014	6237	Wet Weather
Cuyahoga River	11.33	8/19/2014	286	Wet Weather
Cuyahoga River	11.33	8/4/2015	40	Wet Weather
Cuyahoga River	11.33	8/11/2015	8476	Wet Weather
Cuyahoga River	11.33	8/10/2016	1451	Wet Weather
Cuyahoga River	11.33	6/30/2017	8210	Wet Weather
Cuyahoga River	11.33	7/7/2017	6870	Wet Weather
Cuyahoga River	11.33	7/11/2017	8390	Wet Weather
Cuyahoga River	11.33	7/24/2018	616	Wet Weather
Cuyahoga River	11.33	7/31/2018	183	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	9.78	6/3/2014	292	Dry Weather
Cuyahoga River	9.78	6/17/2014	82	Dry Weather
Cuyahoga River	9.78	7/1/2014	205	Dry Weather
Cuyahoga River	9.78	7/15/2014	840	Dry Weather
Cuyahoga River	9.78	9/2/2014	175	Dry Weather
Cuyahoga River	9.78	9/16/2014	1200	Dry Weather
Cuyahoga River	9.78	10/7/2014	170	Dry Weather
Cuyahoga River	9.78	5/5/2015	46	Dry Weather
Cuyahoga River	9.78	5/19/2015	114	Dry Weather
Cuyahoga River	9.78	7/7/2015	93	Dry Weather
Cuyahoga River	9.78	7/21/2015	96	Dry Weather
Cuyahoga River	9.78	8/18/2015	370	Dry Weather
Cuyahoga River	9.78	9/1/2015	140	Dry Weather
Cuyahoga River	9.78	10/6/2015	315	Dry Weather
Cuyahoga River	9.78	10/6/2015	82	Dry Weather
Cuyahoga River	9.78	10/20/2015	68	Dry Weather
Cuyahoga River	9.78	6/21/2016	266	Dry Weather
Cuyahoga River	9.78	7/5/2016	223	Dry Weather
Cuyahoga River	9.78	8/2/2016	484	Dry Weather
Cuyahoga River	9.78	9/6/2016	70	Dry Weather
Cuyahoga River	9.78	9/6/2016	31	Dry Weather
Cuyahoga River	9.78	9/20/2016	404	Dry Weather
Cuyahoga River	9.78	9/20/2016	432	Dry Weather
Cuyahoga River	9.78	10/18/2016	66	Dry Weather
Cuyahoga River	9.78	5/16/2017	70	Dry Weather
Cuyahoga River	9.78	6/6/2017	168	Dry Weather
Cuyahoga River	9.78	7/5/2017	3053	Dry Weather
Cuyahoga River	9.78	7/18/2017	82	Dry Weather
Cuyahoga River	9.78	8/1/2017	23	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	11.33	8/7/2018	9250	Wet Weather
Cuyahoga River	11.33	8/14/2018	474	Wet Weather
Cuyahoga River	11.33	8/21/2018	8280	Wet Weather
Cuyahoga River	11.33	7/23/2019	3730	Wet Weather
Cuyahoga River	11.33	7/30/2019	1220	Wet Weather
Cuyahoga River	11.33	8/20/2019	466	Wet Weather
Cuyahoga River	11.33	6/24/2020	1482	Wet Weather
Cuyahoga River	11.33	7/8/2020	4150	Wet Weather
Cuyahoga River	11.33	8/5/2013	520	Dry Weather
Cuyahoga River	11.33	8/19/2013	69	Dry Weather
Cuyahoga River	11.33	7/23/2014	92	Dry Weather
Cuyahoga River	11.33	7/21/2015	131	Dry Weather
Cuyahoga River	11.33	7/28/2015	62	Dry Weather
Cuyahoga River	11.33	8/18/2015	276	Dry Weather
Cuyahoga River	11.33	7/27/2016	531	Dry Weather
Cuyahoga River	11.33	8/3/2016	402	Dry Weather
Cuyahoga River	11.33	8/3/2016	254	Dry Weather
Cuyahoga River	11.33	8/17/2016	516	Dry Weather
Cuyahoga River	11.33	8/24/2016	261	Dry Weather
Cuyahoga River	11.33	7/18/2017	222	Dry Weather
Cuyahoga River	11.33	7/19/2017	137	Dry Weather
Cuyahoga River	11.33	7/25/2017	294	Dry Weather
Cuyahoga River	11.33	8/1/2017	26	Dry Weather
Cuyahoga River	11.33	8/1/2017	36	Dry Weather
Cuyahoga River	11.33	8/7/2017	210	Dry Weather
Cuyahoga River	11.33	8/8/2017	238	Dry Weather
Cuyahoga River	11.33	8/22/2017	298	Dry Weather
Cuyahoga River	11.33	8/6/2019	166	Dry Weather
Cuyahoga River	11.33	8/13/2019	664	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	9.78	8/15/2017	127	Dry Weather
Cuyahoga River	9.78	9/19/2017	44	Dry Weather
Cuyahoga River	9.78	10/3/2017	72	Dry Weather
Cuyahoga River	9.78	10/17/2017	142	Dry Weather
Cuyahoga River	9.78	5/1/2018	26	Dry Weather
Cuyahoga River	9.78	7/3/2018	1702	Dry Weather
Cuyahoga River	9.78	9/4/2018	524	Dry Weather
Cuyahoga River	9.78	9/18/2018	158	Dry Weather
Cuyahoga River	9.78	10/2/2018	122	Dry Weather
Cuyahoga River	9.78	10/16/2018	173	Dry Weather
Cuyahoga River	9.78	10/16/2018	424	Dry Weather
Cuyahoga River	9.78	5/7/2019	126	Dry Weather
Cuyahoga River	9.78	5/21/2019	70	Dry Weather
Cuyahoga River	9.78	7/2/2019	116	Dry Weather
Cuyahoga River	9.78	7/16/2019	193	Dry Weather
Cuyahoga River	9.78	7/16/2019	139	Dry Weather
Cuyahoga River	9.78	8/6/2019	188	Dry Weather
Cuyahoga River	9.78	9/3/2019	324	Dry Weather
Cuyahoga River	9.78	9/17/2019	334	Dry Weather
Cuyahoga River	9.78	10/1/2019	183	Dry Weather
Cuyahoga River	9.78	10/15/2019	94	Dry Weather
Cuyahoga River	9.78	5/4/2020	214	Dry Weather
Cuyahoga River	9.78	6/1/2020	178	Dry Weather
Cuyahoga River	9.78	6/15/2020	66	Dry Weather
Cuyahoga River	9.78	7/1/2020	133	Dry Weather
Cuyahoga River	9.78	7/15/2020	91	Dry Weather
Cuyahoga River	9.78	9/1/2020	318	Dry Weather
Cuyahoga River	9.78	9/16/2020	179	Dry Weather
Cuyahoga River	9.78	5/5/2021	147	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	11.33	6/17/2020	234	Dry Weather
Cuyahoga River	11.33	6/17/2020	91	Dry Weather
Cuyahoga River	11.33	7/1/2020	186	Dry Weather
Cuyahoga River	11.33	7/15/2020	180	Dry Weather
Cuyahoga River	10.95	6/4/2013	436	Wet Weather
Cuyahoga River	10.95	6/18/2013	275	Wet Weather
Cuyahoga River	10.95	9/3/2013	460	Wet Weather
Cuyahoga River	10.95	9/17/2013	295	Wet Weather
Cuyahoga River	10.95	10/1/2013	255	Wet Weather
Cuyahoga River	10.95	8/5/2014	150	Wet Weather
Cuyahoga River	10.95	8/19/2014	145	Wet Weather
Cuyahoga River	10.95	8/25/2014	5600	Wet Weather
Cuyahoga River	10.95	6/2/2015	1462	Wet Weather
Cuyahoga River	10.95	6/16/2015	11900	Wet Weather
Cuyahoga River	10.95	8/4/2015	49	Wet Weather
Cuyahoga River	10.95	9/15/2015	406	Wet Weather
Cuyahoga River	10.95	5/17/2016	173	Wet Weather
Cuyahoga River	10.95	6/7/2016	1206	Wet Weather
Cuyahoga River	10.95	7/19/2016	208	Wet Weather
Cuyahoga River	10.95	8/16/2016	293	Wet Weather
Cuyahoga River	10.95	10/4/2016	391	Wet Weather
Cuyahoga River	10.95	5/2/2017	9080	Wet Weather
Cuyahoga River	10.95	5/2/2017	8650	Wet Weather
Cuyahoga River	10.95	6/20/2017	291	Wet Weather
Cuyahoga River	10.95	6/30/2017	3570	Wet Weather
Cuyahoga River	10.95	7/7/2017	16300	Wet Weather
Cuyahoga River	10.95	9/5/2017	1940	Wet Weather
Cuyahoga River	10.95	5/15/2018	1992	Wet Weather
Cuyahoga River	10.95	6/5/2018	1996	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	9.78	5/17/2021	78	Dry Weather
Cuyahoga River	9.78	6/2/2021	199	Dry Weather
Cuyahoga River	9.78	6/15/2021	185	Dry Weather
Cuyahoga River	9.78	7/6/2021	91	Dry Weather
Cuyahoga River	9.78	8/2/2021	770	Dry Weather
Cuyahoga River	9.78	8/16/2021	461	Dry Weather
Cuyahoga River	9.78	6/1/2022	60	Dry Weather
Cuyahoga River	9.78	8/1/2022	81	Dry Weather
Cuyahoga River	9.7	6/30/2017	6680	Wet Weather
Cuyahoga River	9.7	7/7/2017	2450	Wet Weather
Cuyahoga River	9.7	7/19/2017	145	Dry Weather
Cuyahoga River	9.7	8/7/2017	137	Dry Weather
Cuyahoga River	9.7	8/22/2017	186	Dry Weather
Cuyahoga River	8.6	7/22/2013	250	Wet Weather
Cuyahoga River	8.6	7/29/2013	165	Wet Weather
Cuyahoga River	8.6	8/12/2013	180	Wet Weather
Cuyahoga River	8.6	7/29/2014	2075	Wet Weather
Cuyahoga River	8.6	8/5/2014	450	Wet Weather
Cuyahoga River	8.6	8/5/2014	220	Wet Weather
Cuyahoga River	8.6	8/12/2014	4797	Wet Weather
Cuyahoga River	8.6	8/19/2014	110	Wet Weather
Cuyahoga River	8.6	8/4/2015	35	Wet Weather
Cuyahoga River	8.6	8/11/2015	11716	Wet Weather
Cuyahoga River	8.6	8/10/2016	5257	Wet Weather
Cuyahoga River	8.6	8/10/2016	4253	Wet Weather
Cuyahoga River	8.6	7/11/2017	29090	Wet Weather
Cuyahoga River	8.6	7/24/2018	1973	Wet Weather
Cuyahoga River	8.6	7/31/2018	158	Wet Weather
Cuyahoga River	8.6	7/31/2018	146	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	10.95	6/19/2018	18160	Wet Weather
Cuyahoga River	10.95	7/17/2018	2640	Wet Weather
Cuyahoga River	10.95	8/7/2018	8390	Wet Weather
Cuyahoga River	10.95	8/21/2018	12590	Wet Weather
Cuyahoga River	10.95	6/4/2019	1006	Wet Weather
Cuyahoga River	10.95	6/18/2019	1310	Wet Weather
Cuyahoga River	10.95	8/20/2019	813	Wet Weather
Cuyahoga River	10.95	5/20/2020	816	Wet Weather
Cuyahoga River	10.95	8/3/2020	464	Wet Weather
Cuyahoga River	10.95	8/17/2020	1866	Wet Weather
Cuyahoga River	10.95	10/15/2020	387	Wet Weather
Cuyahoga River	10.95	7/15/2021	517	Wet Weather
Cuyahoga River	10.95	9/1/2021	308	Wet Weather
Cuyahoga River	10.95	9/16/2021	613	Wet Weather
Cuyahoga River	10.95	10/4/2021	285	Wet Weather
Cuyahoga River	10.95	10/18/2021	517	Wet Weather
Cuyahoga River	10.95	5/2/2022	579	Wet Weather
Cuyahoga River	10.95	5/16/2022	1120	Wet Weather
Cuyahoga River	10.95	6/15/2022	313	Wet Weather
Cuyahoga River	10.95	7/5/2022	9678	Wet Weather
Cuyahoga River	10.95	7/15/2022	308	Wet Weather
Cuyahoga River	10.95	5/7/2013	34	Dry Weather
Cuyahoga River	10.95	5/21/2013	52	Dry Weather
Cuyahoga River	10.95	7/2/2013	335	Dry Weather
Cuyahoga River	10.95	7/16/2013	225	Dry Weather
Cuyahoga River	10.95	8/6/2013	235	Dry Weather
Cuyahoga River	10.95	8/20/2013	51	Dry Weather
Cuyahoga River	10.95	10/15/2013	165	Dry Weather
Cuyahoga River	10.95	5/6/2014	63	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	8.6	8/7/2018	15250	Wet Weather
Cuyahoga River	8.6	8/14/2018	314	Wet Weather
Cuyahoga River	8.6	8/21/2018	8520	Wet Weather
Cuyahoga River	8.6	7/23/2019	2430	Wet Weather
Cuyahoga River	8.6	7/30/2019	1836	Wet Weather
Cuyahoga River	8.6	8/20/2019	390	Wet Weather
Cuyahoga River	8.6	6/24/2020	1552	Wet Weather
Cuyahoga River	8.6	7/8/2020	3550	Wet Weather
Cuyahoga River	8.6	8/10/2021	13000	Wet Weather
Cuyahoga River	8.6	8/5/2013	308	Dry Weather
Cuyahoga River	8.6	8/19/2013	75	Dry Weather
Cuyahoga River	8.6	7/23/2014	96	Dry Weather
Cuyahoga River	8.6	7/21/2015	108	Dry Weather
Cuyahoga River	8.6	7/28/2015	76	Dry Weather
Cuyahoga River	8.6	8/18/2015	363	Dry Weather
Cuyahoga River	8.6	7/27/2016	312	Dry Weather
Cuyahoga River	8.6	8/3/2016	366	Dry Weather
Cuyahoga River	8.6	8/17/2016	226	Dry Weather
Cuyahoga River	8.6	8/24/2016	100	Dry Weather
Cuyahoga River	8.6	7/18/2017	131	Dry Weather
Cuyahoga River	8.6	7/25/2017	181	Dry Weather
Cuyahoga River	8.6	8/1/2017	64	Dry Weather
Cuyahoga River	8.6	8/8/2017	225	Dry Weather
Cuyahoga River	8.6	8/6/2019	165	Dry Weather
Cuyahoga River	8.6	8/13/2019	222	Dry Weather
Cuyahoga River	8.6	6/17/2020	102	Dry Weather
Cuyahoga River	8.6	7/1/2020	124	Dry Weather
Cuyahoga River	8.6	7/15/2020	135	Dry Weather
Cuyahoga River	8.6	7/20/2021	488	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	10.95	5/20/2014	250	Dry Weather
Cuyahoga River	10.95	6/3/2014	355	Dry Weather
Cuyahoga River	10.95	6/17/2014	125	Dry Weather
Cuyahoga River	10.95	7/1/2014	190	Dry Weather
Cuyahoga River	10.95	7/15/2014	720	Dry Weather
Cuyahoga River	10.95	9/2/2014	205	Dry Weather
Cuyahoga River	10.95	9/16/2014	1384	Dry Weather
Cuyahoga River	10.95	10/7/2014	364	Dry Weather
Cuyahoga River	10.95	5/5/2015	59	Dry Weather
Cuyahoga River	10.95	5/19/2015	195	Dry Weather
Cuyahoga River	10.95	7/7/2015	107	Dry Weather
Cuyahoga River	10.95	7/21/2015	168	Dry Weather
Cuyahoga River	10.95	8/18/2015	283	Dry Weather
Cuyahoga River	10.95	9/1/2015	109	Dry Weather
Cuyahoga River	10.95	10/6/2015	152	Dry Weather
Cuyahoga River	10.95	10/20/2015	84	Dry Weather
Cuyahoga River	10.95	6/21/2016	306	Dry Weather
Cuyahoga River	10.95	7/5/2016	381	Dry Weather
Cuyahoga River	10.95	8/2/2016	622	Dry Weather
Cuyahoga River	10.95	9/6/2016	37	Dry Weather
Cuyahoga River	10.95	9/20/2016	274	Dry Weather
Cuyahoga River	10.95	10/16/2016	63	Dry Weather
Cuyahoga River	10.95	5/16/2017	70	Dry Weather
Cuyahoga River	10.95	6/6/2017	219	Dry Weather
Cuyahoga River	10.95	7/5/2017	410	Dry Weather
Cuyahoga River	2.74	8/17/2016	302	Dry Weather
Cuyahoga River	2.74	8/17/2016	222	Dry Weather
Cuyahoga River	2.74	8/24/2016	86	Dry Weather
Cuyahoga River	2.74	7/19/2017	96	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	8.6	7/27/2021	172	Dry Weather
Cuyahoga River	8.6	8/3/2021	111	Dry Weather
Cuyahoga River	8.6	8/17/2021	291	Dry Weather
Cuyahoga River	7.1	7/22/2013	324	Wet Weather
Cuyahoga River	7.1	7/29/2013	155	Wet Weather
Cuyahoga River	7.1	7/29/2013	175	Wet Weather
Cuyahoga River	7.1	8/12/2013	290	Wet Weather
Cuyahoga River	7.1	7/29/2014	1406	Wet Weather
Cuyahoga River	7.1	8/5/2014	126	Wet Weather
Cuyahoga River	7.1	8/12/2014	6569	Wet Weather
Cuyahoga River	7.1	8/19/2014	134	Wet Weather
Cuyahoga River	7.1	6/15/2015	2400	Wet Weather
Cuyahoga River	7.1	8/4/2015	158	Wet Weather
Cuyahoga River	7.1	8/11/2015	13542	Wet Weather
Cuyahoga River	7.1	8/10/2016	5536	Wet Weather
Cuyahoga River	7.1	9/26/2016	330	Wet Weather
Cuyahoga River	7.1	6/30/2017	1420	Wet Weather
Cuyahoga River	7.1	7/7/2017	25900	Wet Weather
Cuyahoga River	7.1	7/11/2017	21420	Wet Weather
Cuyahoga River	7.1	6/4/2018	3430	Wet Weather
Cuyahoga River	7.1	7/24/2018	6260	Wet Weather
Cuyahoga River	7.1	7/31/2018	150	Wet Weather
Cuyahoga River	7.1	8/7/2018	17500	Wet Weather
Cuyahoga River	7.1	8/7/2018	26000	Wet Weather
Cuyahoga River	7.1	8/14/2018	200	Wet Weather
Cuyahoga River	7.1	8/21/2018	97680	Wet Weather
Cuyahoga River	7.1	7/23/2019	2920	Wet Weather
Cuyahoga River	7.1	7/30/2019	848	Wet Weather
Cuyahoga River	7.1	8/5/2013	480	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	2.74	8/7/2017	187	Dry Weather
Cuyahoga River	2.74	8/22/2017	836	Dry Weather
Cuyahoga River	0.7	9/30/2014	108	Wet Weather
Cuyahoga River	0.7	9/30/2014	90	Wet Weather
Cuyahoga River	0.7	9/30/2014	157	Wet Weather
Cuyahoga River	0.7	9/30/2014	142	Wet Weather
Cuyahoga River	0.7	9/30/2014	248	Wet Weather
Cuyahoga River	0.7	9/30/2014	146	Wet Weather
Cuyahoga River	0.7	9/30/2014	272	Wet Weather
Cuyahoga River	0.7	9/30/2014	170	Wet Weather
Cuyahoga River	0.7	9/30/2014	167	Wet Weather
Cuyahoga River	0.7	10/1/2014	1418	Wet Weather
Cuyahoga River	0.7	10/2/2014	530	Wet Weather
Cuyahoga River	0.7	7/25/2014	46	Dry Weather
Cuyahoga River	0.7	10/3/2014	198	Dry Weather
Cuyahoga River	0.25	5/12/2015	12119	Wet Weather
Cuyahoga River	0.25	5/28/2015	3460	Wet Weather
Cuyahoga River	0.25	6/1/2015	4690	Wet Weather
Cuyahoga River	0.25	6/12/2015	464	Wet Weather
Cuyahoga River	0.25	6/15/2015	2416	Wet Weather
Cuyahoga River	0.25	6/24/2015	10216	Wet Weather
Cuyahoga River	0.25	6/29/2015	2275	Wet Weather
Cuyahoga River	0.25	7/8/2015	2559	Wet Weather
Cuyahoga River	0.25	7/13/2015	4821	Wet Weather
Cuyahoga River	0.25	8/11/2015	2216	Wet Weather
Cuyahoga River	0.25	8/31/2015	410	Wet Weather
Cuyahoga River	0.25	9/4/2015	320	Wet Weather
Cuyahoga River	0.25	9/14/2015	561	Wet Weather
Cuyahoga River	0.25	9/30/2015	658	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	7.1	8/19/2013	87	Dry Weather
Cuyahoga River	7.1	7/23/2014	146	Dry Weather
Cuyahoga River	7.1	7/21/2015	160	Dry Weather
Cuyahoga River	7.1	7/28/2015	321	Dry Weather
Cuyahoga River	7.1	8/18/2015	630	Dry Weather
Cuyahoga River	7.1	8/18/2015	724	Dry Weather
Cuyahoga River	7.1	6/20/2016	390	Dry Weather
Cuyahoga River	7.1	7/27/2016	320	Dry Weather
Cuyahoga River	7.1	8/3/2016	744	Dry Weather
Cuyahoga River	7.1	8/17/2016	1189	Dry Weather
Cuyahoga River	7.1	8/24/2016	178	Dry Weather
Cuyahoga River	7.1	7/18/2017	385	Dry Weather
Cuyahoga River	7.1	7/19/2017	91	Dry Weather
Cuyahoga River	7.1	7/25/2017	288	Dry Weather
Cuyahoga River	7.1	7/25/2017	260	Dry Weather
Cuyahoga River	7.1	8/1/2017	50	Dry Weather
Cuyahoga River	7.1	8/7/2017	124	Dry Weather
Cuyahoga River	7.1	8/8/2017	161	Dry Weather
Cuyahoga River	7.1	8/22/2017	866	Dry Weather
Cuyahoga River	7.1	8/6/2019	81	Dry Weather
Cuyahoga River	7.1	8/13/2019	179	Dry Weather
Cuyahoga River	7.1	8/20/2019	546	Dry Weather
Cuyahoga River	5.9	7/22/2013	404	Wet Weather
Cuyahoga River	5.9	7/29/2013	140	Wet Weather
Cuyahoga River	5.9	8/12/2013	478	Wet Weather
Cuyahoga River	5.9	7/29/2014	1894	Wet Weather
Cuyahoga River	5.9	8/5/2014	359	Wet Weather
Cuyahoga River	5.9	8/12/2014	7456	Wet Weather
Cuyahoga River	5.9	8/19/2014	348	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	0.25	10/5/2015	436	Wet Weather
Cuyahoga River	0.25	10/28/2015	250	Wet Weather
Cuyahoga River	0.25	5/2/2016	8769	Wet Weather
Cuyahoga River	0.25	5/13/2016	1138	Wet Weather
Cuyahoga River	0.25	6/6/2016	11880	Wet Weather
Cuyahoga River	0.25	7/18/2016	1110	Wet Weather
Cuyahoga River	0.25	8/10/2016	143	Wet Weather
Cuyahoga River	0.25	9/9/2016	1014	Wet Weather
Cuyahoga River	0.25	9/19/2016	150	Wet Weather
Cuyahoga River	0.25	9/29/2016	316	Wet Weather
Cuyahoga River	0.25	10/20/2016	468	Wet Weather
Cuyahoga River	0.25	10/27/2016	202	Wet Weather
Cuyahoga River	0.25	10/27/2016	632	Wet Weather
Cuyahoga River	0.25	5/6/2015	389	Dry Weather
Cuyahoga River	0.25	7/1/2015	5492	Dry Weather
Cuyahoga River	0.25	8/3/2015	29	Dry Weather
Cuyahoga River	0.25	8/19/2015	1182	Dry Weather
Cuyahoga River	0.25	10/16/2015	88	Dry Weather
Cuyahoga River	0.2	7/22/2013	46	Wet Weather
Cuyahoga River	0.2	7/29/2013	250	Wet Weather
Cuyahoga River	0.2	8/12/2013	108	Wet Weather
Cuyahoga River	0.2	7/29/2014	967	Wet Weather
Cuyahoga River	0.2	8/5/2014	126	Wet Weather
Cuyahoga River	0.2	8/12/2014	4502	Wet Weather
Cuyahoga River	0.2	8/19/2014	120	Wet Weather
Cuyahoga River	0.2	8/4/2015	150	Wet Weather
Cuyahoga River	0.2	8/11/2015	1571	Wet Weather
Cuyahoga River	0.2	8/10/2016	2603	Wet Weather
Cuyahoga River	0.2	7/18/2022	6932	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	5.9	9/30/2014	2730	Wet Weather
Cuyahoga River	5.9	10/1/2014	4638	Wet Weather
Cuyahoga River	5.9	10/2/2014	2990	Wet Weather
Cuyahoga River	5.9	8/4/2015	126	Wet Weather
Cuyahoga River	5.9	8/11/2015	10674	Wet Weather
Cuyahoga River	5.9	8/10/2016	14660	Wet Weather
Cuyahoga River	5.9	8/5/2013	1080	Dry Weather
Cuyahoga River	5.9	8/19/2013	84	Dry Weather
Cuyahoga River	5.9	7/23/2014	224	Dry Weather
Cuyahoga River	5.9	7/25/2014	144	Dry Weather
Cuyahoga River	5.9	10/3/2014	320	Dry Weather
Cuyahoga River	5.9	7/21/2015	216	Dry Weather
Cuyahoga River	5.9	7/28/2015	108	Dry Weather
Cuyahoga River	5.9	8/18/2015	658	Dry Weather
Cuyahoga River	5.9	7/27/2016	600	Dry Weather
Cuyahoga River	5.9	8/3/2016	605	Dry Weather
Cuyahoga River	5.9	8/17/2016	1064	Dry Weather
Cuyahoga River	5.9	8/24/2016	216	Dry Weather
Cuyahoga River	2.74	7/22/2013	150	Wet Weather
Cuyahoga River	2.74	7/29/2013	105	Wet Weather
Cuyahoga River	2.74	8/12/2013	205	Wet Weather
Cuyahoga River	2.74	7/29/2014	2314	Wet Weather
Cuyahoga River	2.74	8/5/2014	106	Wet Weather
Cuyahoga River	2.74	8/12/2014	5142	Wet Weather
Cuyahoga River	2.74	8/19/2014	526	Wet Weather
Cuyahoga River	2.74	8/4/2015	372	Wet Weather
Cuyahoga River	2.74	8/11/2015	16041	Wet Weather
Cuyahoga River	2.74	8/10/2016	6440	Wet Weather
Cuyahoga River	2.74	6/30/2017	236	Wet Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	0.2	8/31/2022	326	Wet Weather
Cuyahoga River	0.2	8/5/2013	660	Dry Weather
Cuyahoga River	0.2	8/19/2013	270	Dry Weather
Cuyahoga River	0.2	7/23/2014	81	Dry Weather
Cuyahoga River	0.2	7/21/2015	202	Dry Weather
Cuyahoga River	0.2	7/28/2015	56	Dry Weather
Cuyahoga River	0.2	8/18/2015	34	Dry Weather
Cuyahoga River	0.2	7/27/2016	79	Dry Weather
Cuyahoga River	0.2	8/3/2016	37	Dry Weather
Cuyahoga River	0.2	8/17/2016	139	Dry Weather

Stream	RM	Date	E.coli (MPN/100mL)	Notes
Cuyahoga River	2.74	7/7/2017	26000	Wet Weather
Cuyahoga River	2.74	8/5/2013	436	Dry Weather
Cuyahoga River	2.74	8/5/2013	480	Dry Weather
Cuyahoga River	2.74	8/19/2013	35	Dry Weather
Cuyahoga River	2.74	7/23/2014	218	Dry Weather
Cuyahoga River	2.74	7/21/2015	96	Dry Weather
Cuyahoga River	2.74	7/28/2015	36	Dry Weather
Cuyahoga River	2.74	8/18/2015	52	Dry Weather
Cuyahoga River	2.74	7/27/2016	278	Dry Weather
Cuyahoga River	2.74	8/3/2016	190	Dry Weather

Appendix D – Public Comment

Public Comments Summarized	Response
Would there be changes to monitoring and advisories postings at the beaches after the BUI is removed?	The BUI removal has no impact on the frequency and duration of water quality monitoring sampling and advisory postings at the AOC beaches.
Will there be funding opportunities for beach water quality improvements after BUI removal?	AOC specific funding will not be available for beach water quality improvement projects once the BUI is removed. Funding for projects is still possible through other sources.
Any future evaluation of beach conditions after BUI removal?	Once a BUI is removed from an AOC, additional data evaluation is not required. Data collection post BUI removal may occur outside of the AOC program through other state, local, and federal agencies.
Are there sewer inspections in collection systems near AOC beaches?	Local and regional agencies conduct illicit discharge investigations within the wastewater collection systems near the AOC beaches and streams when a problem is detected.
What about waterfowl impacts on water quality at Euclid and Villa Angela beaches?	NEORSD microbial source tracking assessments indicate that waterfowl were not a primary contributor of <i>E. coli</i> at Euclid and Villa Angela beaches.
Clarification of Euclid Creek paddling stream designation.	Euclid Creek was not designed by ODNR as a paddling stream; therefore, the BUI paddling stream restoration targets do not apply.
Acknowledgement of beach improvements and bird management from long-time residents near Cleveland’s Lakefront Reservation.	Comment was noted and agreed with.

Appendix E – Letter of Support Cuyahoga River AOC Community Advisory Committee



August 15th, 2024

Anne M. Vogel, Director
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, OH 43216-1049

Joy Mulinex, Executive Director
Ohio Lake Erie Commission
P.O. Box 1049
Columbus, OH 43216-1049

Re: Removal of Beneficial Use Impairment #10 (Beach Closures/Recreational Use) from Cuyahoga River Area of Concern

Dear Directors Vogel and Mulinex,

The Cuyahoga River Area of Concern (AOC) Advisory Committee, containing 25 members representing an array of agencies, nonprofits, and the public, offers its support of the Ohio Lake Erie Commission in their recommendation to remove Beneficial Use Impairment (BUI) #10 Beach Closures (Recreational Use) from the Cuyahoga River AOC.

The Advisory Committee has reviewed available data, materials, and documents for the removal, in the Cuyahoga River AOC, of said BUI. The Advisory Committee has determined that all applicable data satisfies the State of Ohio removal criteria for this BUI and has voted unanimously during our July 15, 2024 quarterly meeting to support the request for its removal.

If Ohio EPA and the Ohio Lake Erie Commission concur that the removal of this BUI is warranted, the Advisory Committee requests the agencies to proceed with the process of removing this BUI from the Cuyahoga River AOC.

With the removal of this BUI, the following impairments will remain in the Cuyahoga River AOC.

- BUI #3: Degradation of Fish Populations
- BUI #6: Degradation of Benthos
- BUI #7: Restrictions on Navigational Dredging
- BUI #14: Loss of Fish Habitat

The Cuyahoga River AOC Advisory Committee will continue its efforts to remove the remaining impairments leading to the delisting and the complete restoration of the Cuyahoga River AOC.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Grieser".

Jennifer Grieser
Chair, Cuyahoga River AOC Advisory Committee