



# **Grand Calumet River Area of Concern Beach Closings BUI: Proposed Management Action List**

Citizens Advisory for the Remediation of the Environment (CARE)  
Workgroup Meeting  
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# Beaches In the Grand Calumet River AOC





# State Recreational Water Quality Standard

- The state water quality standard (WQS) for full-body recreational contact is an *E. coli* concentration of not more than 235 colony-forming units per 100 milliliter water sample
  - *E. coli* is a fecal indicator bacteria (it indicates contamination by human or animal waste)
  - Indiana uses U.S. EPA-approved culture-based methods to assess *E. coli* concentration
- *E. coli* concentrations greater than the state WQS require a beach action (e.g., advisory or beach closure)



# BUI Listing/RAPs

**IJC LISTING GUIDELINE: When waters, which are commonly used for total-body contact or partial-body contact recreation, exceed standards, objectives, or guidelines for such use.**

- The Stage 1 Remedial Action Plan (RAP) in 1991 pointed to the following factors in assessing the applicability of the beach closings BUI:
  - Swimming is not recommended in the river or canal, due to poor water quality
  - The Hammond Beach was closed for several years
  - In 1990, Chicago beaches and the Indiana Dunes National Lakeshore were closed due to high coliform counts, but the source may or may not have been from the AOC
- The Stage 2.5 Update RAP in 1998 specifically pointed to closings at the following beaches as demonstrating the impairment:
  - Marquette Park Beach
  - Jeorse Park Beach
  - Wolf Lake



# **Beneficial Use Impairment (BUI) #10: Beach Closings**

***This BUI can be considered for removal when:***

Each individual beach along the Lake Michigan shoreline in the AOC has a percent exceedance rate of no higher than 15% for the *E. coli* samples taken from Memorial Day to Labor Day for three years out of a five-year period.

**OR ...**



## ***This BUI can be considered for removal when:***

Percent exceedance rates at AOC beaches will be compared to percent exceedance rates for comparable Lake Michigan beaches located outside of the AOC to determine if there is a significant difference\* for three years out of a five-year period, and if none occurs, then the Beach Closings BUI may be suggested for removal.

\*A significant difference is defined as no greater than a one percent variance between an individual AOC beach and an individual non-AOC beach in each of the three years relied upon for suggesting BUI removal.

**Note:** *Contamination that leads to exceedances within the AOC may also be attributable to sources outside the AOC.*



# BUI #10 – Exceedance Rates for Grand Calumet River AOC Beaches

AOC Beach Exceedance % Rates by Year*	2020	2019	2018	2017	2016	2015	2014
Hammond West	3	2	4	6	4	8	7
Hammond East	8	7	9	6	11	10	16
Whihala West	10	17	9	17	20	18	12
Whihala East	2	6	11	3	8	8	8
Jeorse Park I ***	30	26	32	11	24	42	54
Jeorse Park II ***	23	19	23	7	13	26	40
Buffington Harbor***	20	11	16	5	13	20	29
Lake Street**	1	2	3	1	4	5	3
Marquette Park**	1	3	< 1	0	2	5	3

\*Exceedance rates based on number of samples collected from Memorial Day weekend through Labor Day.

\*\*Lake Street and Marquette Park started monitoring on July 15, 2020 and on June 1, 2018.

\*\*\*East Chicago beaches started monitoring on June 16, 2020



# Summary of Projects To Identify *E. coli* Sources

- Microbial Source Tracking (MST) studies conducted by USGS have consistently shown that human (sewage) genetic markers are rare compared to gull (primary) and dog (secondary) markers.
- Michigan State University (MSU) modeling work indicated that:
  - *E. coli* contributions from the Grand Calumet River / Indiana Harbor Ship Canal to the East Chicago beaches were minor.
  - The sand in the swash zone (wave-action zone) acts as a reservoir for *E. coli*.
  - The embayed geomorphology of the East Chicago beaches contributes to high *E. coli* levels. There is no practical way to alter this geomorphology to achieve the required reductions.
- Conclusion: Beach best management practices are required to reduce *E. coli* and thus, beach closings.





# Project Work Aimed at *E. coli* Reduction

- IDEM-funded piloting/implementation of BMPs:
  - Goosinator remote-controlled deterrent
  - Wild Goose Chase dog service program
  - Installation of Eagle Eye structural deterrents at Whihala beach (coordinated with the IDNR ornithologist on use)
  - Installation of wildlife-resistant trash and recycling containers at Hammond, Whiting, and East Chicago beaches
- USDA ring-billed gull/cormorant depredation efforts
- Jeorse Park Beach Section 506 Great Lakes Fishery and Ecosystem Restoration (GLFER)
  - Restoration of 40 acres of onshore and in-lake habitat
  - Reduction of line-of-sight for gulls, reducing attractiveness of habitat for loafing and foraging
- Outreach
  - Bilingual no handfeeding signage
  - Two-part video on *E. coli* problems at AOC beaches and potential solutions
  - PSA-style video encouraging adoption of BMPs by the public



# Management Action List Components

- **Main body:** Describes the path forward to achieve BUI removal and the rationale
- **Attachment A:** Lists the BUI removal target
- **Attachment B:** An overview of work to date to identify and address sources of *E. coli* contamination within the AOC



# MAL: Key Messaging

- IDEM and CARE remain committed to working with AOC communities to implement best management practices (BMPs) to reduce *E. coli* at the beaches
  - Conducting routine beach grooming
  - Discouraging hand-feeding of wildlife
  - Reducing accumulation of trash and pet waste
- IDEM also supports efforts by USDA to continue ring-billed gull and cormorant depredation efforts in Chicago and NW Indiana through GLRI FA 3
- IDEM will not request additional project-oriented GLRI funds (i.e., direct funding grants) to carry out management actions
  - IDEM will explore ways that programmatic support funds provided to the state (i.e., Management Assistance Funding) might be leveraged to support adoption of best management practices



# Questions?