

Cuyahoga County Board of Health BEACH Program Tiered Monitoring Plan

	Tier 1	Tier 2	Tier 3
Definition	A coastal or inland public bathing beach	A non-public community bathing beach receiving moderate use	A non-public community bathing beach receiving low use
When to Conduct Routine Sampling	<p>Sampling Period: Memorial Day through Labor Day</p> <p>Sampling Frequency: Four samples per week, Monday through Thursday, will be collected during the sampling period. Sampling frequency for Lake Erie beaches will increase with availability of BEACH Act and/or other funds.</p>	<p>Sampling Period: Memorial Day through Labor Day</p> <p>Sampling Frequency: Two samples a month will be collected during the sampling period. Sampling frequency for Lake Erie beaches will increase with availability of BEACH Act and/or other funds.</p>	<p>Sampling Period: Memorial Day through Labor Day</p> <p>Sampling Frequency: One sample per month will be collected during the sampling period. Sampling frequency for Lake Erie beaches will increase with availability of BEACH Act and/or other funds.</p>
Where to Collect Samples	<p>Middle of highly used bathing area(s).</p> <p>Near known and potential pollution sources.</p>	<p>Middle of bathing area.</p> <p>Near known and potential pollution sources.</p>	<p>Middle of bathing area.</p> <p>Near known and potential pollution sources.</p>
When to Conduct Additional Sampling	<p>After a water quality standard is exceeded When bacterial concentrations exceed a water quality standard, a public notification/water quality advisory will be issued and/or re-sampling may be conducted. If sample results are determined to be accurate, a public notification/ water quality advisory will be issued. Re-sampling will only be conducted when there is reason to doubt the accuracy of the sample result based upon predefined quality assurance measures, or when sample results have historically met water quality standards and no known pollution sources are present. Re-sampling, if necessary, will be conducted as soon as possible if the first sample exceeds water quality standards.</p> <p>After a sewage spill or pollution event Additional sampling will be conducted immediately following a sewage spill or a significant pollution event where there is potential that indicator organism levels may be expected to exceed water quality standards.</p> <p>Reopening after advisory or closure Additional sampling may be conducted to determine whether a public notification/water quality advisory can be discontinued. Since a water quality advisory will not be withdrawn without sample results meeting water quality standards, accelerated sampling may be conducted in order for the water quality advisory to be removed sooner.</p> <p>After a heavy rainfall event Additional sampling may be conducted after heavy rainfall events where historical sample data indicate a significant increase in indicator organism concentrations with rainfall.</p>		
Water samples will be collected in three (3) feet of water from approximately 12 inches below the water's surface.			

CUYAHOGA COUNTY BOARD OF HEALTH

YOUR TRUSTED SOURCE FOR PUBLIC HEALTH INFORMATION

Risk-based Beach Evaluation and Classification Plan & Tiered Monitoring Plan

These plans have been developed in accordance with Chapters 3, 4, and 5 of the National Beach Guidance and Required Performance Criteria for Grants, 2014.

Evaluation and Ranking of Beaches

The points of access to Lake Erie consist only of beaches within the Cuyahoga County Board of Health jurisdiction. One of the beaches is designated as public access. Access to all of the other beaches is restricted to members of their respective clubs or homeowner associations. This plan excludes privately-owned residential properties that are adjacent to the lake. The factors used to evaluate and rank the beaches are 1) beach accessibility, 2) usage, 3) contamination sources in close proximity to the beaches, 4) potential risk to human health based on sanitary survey information and historical data/sample results. The Cuyahoga County Board of Health (CCBH) has collected samples at bathing beaches since 1993, and sample results and environmental and weather conditions have been retained electronically since the inception of the program.

Beaches are ranked using a 3-tiered system as a result of the evaluation process:

- Tier 1 – public beaches
- Tier 2 – non-public (private) beaches with frequent or moderate usage, as determined by operator/manager.
- Tier 3 – non-public (private) beaches with low usage, as determined by the operator/manager.

Arcadia Beach – North End of East 204th Street, Euclid

- GPS Coordinates: 41.60605, -081.54203
- Tier 2 – Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
 - 1) Private access
 - 2) Moderate usage
 - 3) A stormwater outfall is located in the beach area and flows directly into the nearshore water. A combined sewer overflow (CSO) is located in close proximity to beach. The Euclid Wastewater Treatment Plant (WWTP) reports on combined sewer overflows (CSO)/sanitary sewer overflows (SSO) as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Euclid.

- 4) Arcadia Beach has been monitored by CCBH since 1993. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1993 at the inception of the CCBH Bathing Beaches Program, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Bay Park Beach – Lakeview Drive, Bay Village

- GPS Coordinates: 41.48618, -081.89502
- Tier 3 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
 - 1) Private access
 - 2) Low Usage
 - 3) There are stormwater outfalls in the area; however none are accessible for sampling due to topography.
- 4) Bay Park Beach has been monitored by CCBH since 1993. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1993 at the inception of the CCBH Bathing Beaches Program, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Clarkwood Beach, North End of East 267th Street, Euclid

- GPS Coordinates: 41.62598, -081.49792
- Tier 3 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
 - 1) Private access
 - 2) Low usage
 - 3) There are 2 stormwater outfalls located in close proximity to the beach. CSOs are located in the area as well. The Euclid WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Euclid.
- 4) Clarkwood Beach has been monitored by CCBH since 1994. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1994, and again in 2011 as part of an Ohio Department of Health Great Lakes

Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Clifton Beach, Lake Road & Beach Drive, Lakewood

- GPS Coordinates: 41.49060, -081.83530
- Tier 2 - Water sample collected twice per week (due to proximity of the Rocky River) from Memorial Day through Labor Day.
 - 1) Private access
 - 2) Moderate usage
 - 3) The Rocky River is the primary source of stormwater influence and bacterial contamination of nearshore water at Clifton Beach. The Lakewood WWTP is located upstream of the beach, and CSOs discharge directly into the river during periods of heavy rain. The Lakewood WWTP tracks CSO events and reports to the OEPA as required.
 - 4) Clifton Beach has been monitored by CCBH since 2008, when the City of Lakewood began contracting with CCBH. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 2008, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Columbia Park Beach, Columbia Road & Lake Road, Bay Village

- GPS Coordinates: 41.48658, -081.90131
- Tier 3 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
 - 1) Public access, however the beach area is not recognized by the City of Bay Village as a bathing beach. There is unrestricted access to the beach area and lake.
 - 2) Moderate usage
 - 3) Wischmeyer Creek is the primary source of stormwater influence and bacterial contamination at Columbia Park Beach. This is also a popular park for residents to bring dogs to swim in the nearshore water.
 - 4) Columbia Park Beach has been monitored by CCBH since 1993. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The City of Bay Village is notified of the sample results via email. Since Columbia Park is not recognized by the City as a bathing beach, a sign is posted at the park entrance about water quality information. An annual report is made available to the City of Bay Village that contains a summary of sample results for the entire season. A sanitary survey was conducted in 1993 at the inception of the CCBH Bathing Beaches Program, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Edgecliff Beach, North End of East 213th Street, Euclid

- GPS Coordinates: 41.60997, -081.53630
 - Tier 3 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
- 1) Private access
 - 2) Low usage
 - 3) There is 1 stormwater outfall located at the end of the pier, flowing directly into the lake. CSOs are located in the area as well. The Euclid WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Euclid.
 - 4) Edgecliff Beach has been monitored by CCBH since 1994. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1994, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Huntington Beach, Porter Creek Drive & Lake Road, Bay Village

- GPS Coordinates: 41.49103, -081.93577
 - Tier 1 – Two water samples collected seven days per week from one week before Memorial Day through Labor Day. CCBH has implemented predictive modeling at Huntington Beach since 2006. The model is used as the only means of public notification for beach water quality. Predictions are made on a daily basis from the week before Memorial Day through Labor Day.
- 1) Public Access with approximately 250,000 visitors annually
 - 2) High usage
 - 3) There are 4 stormwater conveyances influencing Huntington Beach; 2 outfalls at 29800 Lake Road, Porter Creek, and Cahoon Creek. Water quality at Porter Creek has been linked to Huntington Beach through previous research using genetic fingerprinting laboratory analysis.
 - 4) Huntington Beach has been monitored by CCBH since 1993. The USGS has worked with CCBH since 2000 researching predictive modeling. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. CCBH staff manages the water quality advisories at the beach with the information posted based on modeling predictions. A sanitary survey was conducted in 1993 at the inception of the CCBH Bathing Beaches Program, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Moss Point Beach, North End of East 220th Street, Euclid

- GPS Coordinates: 41.61295, -081.53165
- Tier 3 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.

- 1) Private access
- 2) Low usage
- 3) There is 1 stormwater outfall located in close proximity to the beach. CSOs are located in the area as well. The Euclid WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Euclid.
- 4) Moss Point Beach has been monitored by CCBH since 1993. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1993 at the inception of the CCBH Bathing Beaches Program, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Noble Beach, North End of East 225th Street/Noble Beach Drive, Euclid

- GPS: 41.61480, -081.52774
 - Tier 3 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
- 1) Private access
 - 2) Low usage
 - 3) There are no stormwater outfalls located in close proximity to the beach. CSOs are located in the area. The Euclid WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Euclid.
 - 4) Noble Beach has been monitored by CCBH since 2003. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1994, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Parklawn Beach, Parklawn Road & Avalon Drive, Rocky River

- GPS Coordinates: 41.48356, -081.86025
 - Tier 2 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
- 1) Private access
 - 2) Moderate usage
 - 3) Spencer Creek is the primary source of stormwater influence on the nearshore waters of Parklawn Beach. CSOs are located in the area as well. The Rocky River WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Rocky River.

- 4) Parklawn Beach has been monitored by CCBH since 1993. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1993 at the inception of the CCBH Bathing Beaches Program, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Royal Acres Beach, North End of East 270th Street, Euclid

- GPS Coordinates: 41.62625, -081.49742
 - Tier 3 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
- 1) Private access
 - 2) Low usage
 - 3) There are 2 stormwater outfalls located in close proximity to the beach. CSOs are located in the area as well. The Euclid WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Euclid.
 - 4) Royal Acres Beach has been monitored by CCBH since 1994. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via email, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1994, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Sims Beach, North End of East 232nd Street, Euclid

- GPS Coordinates: 41.61666, -081.52253
 - Tier 3 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
- 1) Public access, however the beach area is not recognized by the City of Euclid as a bathing beach. There is unrestricted access to the beach area and lake.
 - 2) Moderate usage
 - 3) There are 2 stormwater outfalls located on either side of the beach, and one CSO outfall just to the east of the beach. The Euclid WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Euclid.
 - 4) Sims Beach has been monitored by CCBH since 1994. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. Although Sims is not recognized as a bathing beach, the city of Euclid is notified of the sample results via email. The City of Euclid receives an annual report containing all sample results for the season. A sanitary survey was conducted in 1994, and again in 2011 as

part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Utopia Beach, North End of East 200th Street, Euclid

- GPS Coordinates: 41.60444, -081.54403
- Tier 2 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
 - 1) Private access
 - 2) Moderate usage
 - 3) There is 1 stormwater outfall in close proximity to the beach. CSOs are located in the area as well. The Euclid WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Euclid.
 - 4) Utopia Beach has been monitored by CCBH since 1994. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1994, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

Wagar Beach, Wagar Road & Avalon Drive, Rocky River

- GPS Coordinates: 41.48567, -081.85183
- Tier 2 - Water sample collected once per week from Memorial Day through Labor Day. Re-sampling occurs when laboratory results indicate an exceedance of the Beach Action Value of 235 CFU *E.coli*/100 mL sample.
 - 1) Private access
 - 2) Moderate usage
 - 3) Spencer Creek is the primary source of stormwater influence on the nearshore waters of Wagar Beach. CSOs are located in the area as well. The Rocky River WWTP reports on CSOs/SSOs as they occur. CCBH tracks CSO/SSO data as it is reported by the City of Rocky River.
 - 4) Wagar Beach has been monitored by CCBH since 1993. Sample results are stored electronically at CCBH along with the weather and environmental conditions documented at the time of sample collection. The beach experiences water quality exceedances during rain events. The contact person for the beach is notified of sample results via e-mail, with instructions to post “water quality advisory” signs when necessary. A sanitary survey was conducted in 1993 at the inception of the CCBH Bathing Beaches Program, and again in 2011 as part of an Ohio Department of Health Great Lakes Restoration Initiative (GLRI) grant. There were no new sources of contamination identified as a result of the 2011 Annual Sanitary Survey.

As part of enteric illness investigations, CCBH staff members inquire about contact with natural bodies of water. Follow-up visit(s) to beaches may occur if necessary as a result of an investigation. Any findings will be documented on an investigation report form.

Notifications of change in sampling frequency will be published in the Cleveland Plain Dealer as required. A notice will also be available on the CCBH website, www.ccbh.net.

Beach operators are notified of sampling frequency on an annual basis and submit a brief MOU to CCBH regarding sampling activities. The MOU is kept on file at CCBH.

Training & Quality Assurance

CCBH staff members, including summer interns, are trained in proper water sample collection techniques. CCBH has an existing Quality Assurance Management Plan that contains protocol for water quality sampling. This Plan is available to all staff. Staff members also adhere to protocol established in the Ohio Department of Health's Sampling Procedures, in addition to following protocol established by the CCBH contract laboratory, the Northeast Ohio Regional Sewer District (NEORS). The NEORS lab ensures that all samples meet required holding times and that sample manifest/chain-of-custody forms are properly completed.

Data management

All data entry is completed by trained CCBH staff and summer interns. Beach information is stored in the following locations:

- Ohio Nowcast website: <https://pa.water.usgs.gov/apps/nowcast/> – updated on a daily basis.
- Ohio BeachGuard website – updated daily with sample results. Routine sanitary survey data is also entered on a regular basis throughout the season.
- CCBH staff track routine sanitary survey data and sample results using an Excel spreadsheet.
- CCBH staff members update a SharePoint site created by USGS. This site is used primarily for predictive model development and tracking.
- The data collected by CCBH is reported out to ODH and beach operators in the form of an annual report.

Predictive Modeling

Since 2000, CCBH and USGS have partnered in the development of predictive models at Huntington Beach using various software applications, currently Virtual Beach. Model data is obtained, and predictions made daily during the recreation season by approximately 9:30 A.M. The independent variables used in model development will vary slightly from one year to the next and from one sub-season to another. The independent variables used for Huntington Beach can include:

- Wave height - determinations will be made through a visual observation of the lake at the time of sample collection.
- Rainfall amounts occurring over the previous 24-48 hours, obtained from precipitation amounts that occurred at Cleveland Hopkins International Airport. This real-time data is retrieved from the National Oceanic and Atmospheric Administration's website, <https://forecast.weather.gov/MapClick.php?lat=41.410830000000003&lon=-81.849439999999996#.XQzMdlhKhPY>.

- Turbidity measurements - performed by CCBH staff directly at the beach with the use of a Hach 2100Q Portable Turbidimeter in order to have real-time data for the model.
- Wind direction and speed - observed and documented at the time of sample collection. Wind information is obtained from the Cleveland Hopkins International Airport page on the National Oceanic and Atmospheric Administration/National Weather Service website.
- Water level – obtained from NOAA Tides and Currents;
<http://tidesandcurrents.noaa.gov/waterlevels.html?id=9063063>
- Day of the year
- Lake water temperature

The variables can also be combined and manipulated using Virtual Beach software.

The Nowcast website, <https://pa.water.usgs.gov/apps/nowcast/>, was re-designed in 2016 by the USGS to provide a new look and a more interactive system. Although the Virtual Beach software has replaced the Nowcast System, the Nowcast site will continue to be used for public notification. The website contains the following information:

- Current day measurements of water quality and environmental variables used to predict recreational water quality.
- The predicted probability that the bathing water standard for E. coli will be exceeded
- Yesterday's E. coli concentration
- A brief explanation of what the data means

Sub-links are provided to include the following:

- Project summary: describes the project, objectives, approach, and partnerships.
- Bacteria information: provides background information on the project, how a sample is analyzed for E. coli, understanding E. coli and the data collected, and describing how the model was developed.
- Project partners: lists the project partners.
- Sampling sites: maps and descriptions of sampling sites.
- Questions & Answers: list of frequently asked questions with answers.
- Data and Results: detailed spreadsheets of archived and current data, including a tracking of successful and failed predictions.

Both CCBH and USGS maintain written policies and protocol for modeling.

Notification Report

There are several outlets being used by CCBH for public notification of water quality conditions at Lake Erie beaches:

- An e-mail message will be sent to all beach operators as soon as sample results are available. Information pertaining to general beach health and water quality conditions will be relayed to contact persons in this manner as well. This includes any updates on potential harmful algal blooms (HABs), fish kills, and a link to the Ohio BeachGuard website.

- If it is determined that the beach action value (BAV) for *E. coli*, 235 colonies/100 mL, has been exceeded, advisory signs will be posted at the affected beaches. The signage will be based upon Chapter 5: Public Notification and Risk Communication Plan of the National Beach Guidance Document. Signs shall remain posted until it has been determined through subsequent sampling that the standard for *E. coli* is within acceptable limits.
- Signs displaying Virtual Beach model predictions at Huntington Beach will continue to be posted daily. The Nowcast website will be used for public notification throughout the 2021 season.
- Water quality data will be posted on the Ohio BeachGuard website. Sample results and advisories will be entered as soon as possible. Information collected on Routine Sanitary Survey Forms will be posted on a regular basis throughout the summer.
- Water quality data will be available on the CCBH's website on the Beach Program page at <http://www.ccbh.net/water-quality/>
- An organization-wide Twitter account, @ccbh_net, has been in use for the past several years. This account is used to post Virtual Beach predictions as another means of public notification. Currently there are 2,164 followers. Beach-related information and water quality predictions were also posted on the organization's Facebook page; www.facebook.com/ccbh.net. There are 9,881 Facebook contacts at this time.