



City of Chicago



R2019-232

Office of the City Clerk

Document Tracking Sheet

Meeting Date:	4/10/2019
Sponsor(s):	Moore (49)
Type:	Resolution
Title:	Call for recognition of Lakefront Safety Task Force and declaration of May 15 as "Water Safety Day" in Chicago
Committee(s) Assignment:	Committee on Special Events, Cultural Affairs and Recreation

Resolution Calling on Chicago to Improve Lakefront Safety

WHEREAS, Lake Michigan is Chicago's defining geographic feature – providing the means for life, industry, agriculture, recreation and the backdrop for Chicago to rise as a metropolis on the prairie; and

WHEREAS, Lake Michigan provides ample recreation opportunities and a meeting place for Chicagoans from all neighborhoods,

WHEREAS, Keeping Chicagoans and visitors safe is one of the most important responsibilities the City of Chicago and its sister agencies have, and we as a city enjoy a rich history of water safety programs and innovation; and

WHEREAS, Following the tragic drowning of Rogers Park teenager in July of 2018, Alderman Joseph Moore assembled the Lakefront Safety Task Force to identify how such tragedies could be avoided in the future; and

WHEREAS, This task force included a “dream team” of community advocates, government leaders, experts in public health and first responders working to identify how the City of Chicago, its sister agencies, regional partners and residents can work together to make enjoyment of our Lake Michigan lakefront safer for residents and visitors; and

WHEREAS, The following are policy recommendations the task force created toward this goal; and

WHEREAS, Chicago Park District should expand lifeguarding capacity at Chicago beaches by restoring the lifeguard hours and increasing the budget for lifeguard staffing, training and recruitment; lifeguard feeder programs, and water quality testing; and

WHEREAS, Municipalities and park districts throughout the Chicago area should use consistent language and visuals for water safety signs and educational materials including but not limited to information about dangerous currents, appropriate response for bystanders during a drowning emergency, and off-season risks like cold water shock and staying off the ice; and

WHEREAS, The City of Chicago and other government entities with jurisdiction over lakefront access points should bar entry into the water outside of lifeguard hours and at high-risk locations and post warnings with effective messages to deter risky behavior. High risk locations include areas where structural currents are present and areas inaccessible to patrol and response: and

WHEREAS, The Office of Emergency Management and Communication should update rescue and response procedures, including call taker protocols, to collect and communicate information to first-responders enroute to the scene of an emergency: and

WHEREAS, The Chicago Park District should install a numbering location system at all beaches, clearly visible from water looking towards land, for callers to give accurate position: and

WHEREAS, The City of Chicago should equip all police vehicles rescue equipment for water emergencies and rescues in addition to the standard personal protective equipment: and

WHEREAS, The Chicago Office of Emergency Management and Communication, Fire Department and Police Department should train all police and fire personnel to consistently manage the scene of drownings and non-fatal drownings: and

WHEREAS, The City of Chicago and water safety advocates should train Chicago residents in water safety, with an emphasis on youth and communities most at risk of drowning. Chicago Public Schools should provide water safety information, similar to fire, tornado, and active shooter response and the Chicago Fire and Police Departments and the Chicago Park District should conduct annual water safety demonstrations and outreach events: and

WHEREAS, The State of Illinois should mandate and fund water safety education for all Illinois students, teachers, and all educational staff: and

WHEREAS, Chicago area governments and injury prevention organizations should use consistent standards for drowning and non-fatal drowning data collection, compiled by one central source, which should be used in the creation and evaluation of policies and prevention programs: and

WHEREAS, Water safety advocates and professionals should create a Chicago region prevention-centered water safety plan to reduce the incidence of drownings and non-fatal drownings: and

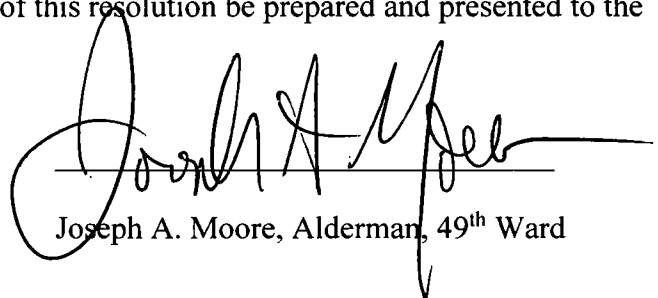
WHEREAS, Chicago Park District should continue to work with communities to offer culturally responsive access to swim lessons with an emphasis on water safety competence and skills; and

WHEREAS, We, as a community of water safety advocates, should affirm the water safety rules of the City of Chicago, Chicago Park District, Chicago Public Schools and the various governments of the Chicago region: and

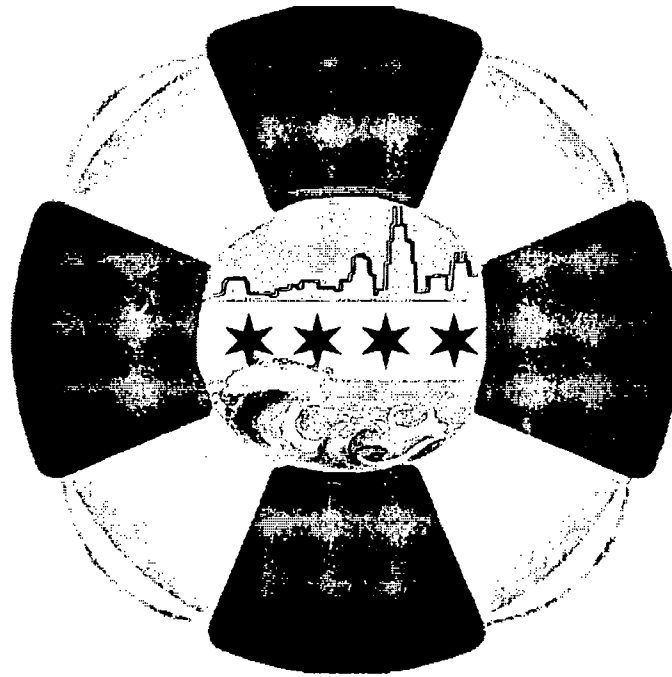
WHEREAS, Alderman Joseph A. Moore of the forty ninth ward brought this momentous occasion to the attention of the Chicago City Council: and

BE IT RESOLVED, That we, the Mayor and Members of the City Council of the City of Chicago, assembled this tenth day of April, 2019, do hereby recognize the Lakefront Safety Task Force and its participants in declaring May 15th as “Water Safety Day” in Chicago; and

BE IT FURTHER RESOLVED, That suitable copies of this resolution be prepared and presented to the members of the Lakefront Safety Task Force.



Joseph A. Moore, Alderman, 49th Ward



City of Chicago
Lakefront Safety Task Force
Initial Report
2018-2019

Dear Stakeholder,

Lake Michigan is Chicago's defining geographic feature – providing the means for life, industry, agriculture, recreation and the backdrop for Chicago to rise as a metropolis on the prairie.

While we may take it for granted, there would not be a Chicago.

The lake provides Chicagoans with ample recreation opportunities. Whether you are sailing in a race off the Lake Michigan shore or wading into your knees on the beach at Loyola Park, this inland sea helps Chicagoans enjoy life here. My own neighborhood of Rogers Park turns into a beach community during the summer as thousands of people per day flock to our street end beaches.

Keeping those people safe is one of the most important responsibilities the City of Chicago and its sister agencies have, and we as a city enjoy a rich history of water safety programs and innovation. Sam Leone, who is credited with initiating modern lifeguarding, protected lives and taught generations of lifeguards here in Chicago. Additionally, Chicago's fire, police and emergency medical services annually respond to hundreds of water-related emergencies no matter the weather or time of day.

Despite our traditions and excellent water safety infrastructure, tragedy still happens, as in the case of Darihanne Torres who tragically drowned during the summer of 2018. Responding to safety advocates, I assembled the Lakefront Water Safety Task Force, comprised of a "dream team" of community advocates, government leaders, experts in public health and first responders. Our mission was to identify ways the City of Chicago, its sister agencies, regional partners and residents can work together to make enjoyment of the Lake Michigan waterfront safer for all Chicagoans and visitors.

The following is the culmination of months of conversation and research, engaging Chicago's best and brightest, to recommend policies and actions we as a community can institute and take to reduce the risk of drowning and to better prepare Chicagoans to be safe while enjoying Lake Michigan.

Hopefully, this document is just the beginning of the conversation and decision-makers will take up this important cause, creating water safety policies that best serve Chicagoans. I want to extend my deepest thanks to the members of the Lakefront Water Safety Task Force for their contributions of passion, expertise and hard work.

Sincerely,

A handwritten signature in black ink, appearing to read "Joe Moore". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Alderman Joe Moore (49)

Forward

On July 6th, 2018 I waded knee deep into Lake Michigan for an officer to hand my husband and me the limp body of a thirteen-year-old girl he had just rescued while her friend, Darihanne, tragically drowned. There were three young boys, their friends, wandering hopelessly as beach-goers and police flocked into dangerous water to help ultimately needing rescuing themselves. I remember one of those boys approaching me nervously to ask if his friend was breathing as I laid her on her side, elevated her feet, held her hand, and kept her awake. He clutched his phone to his chest, something to hold on to, his eyes pleading, and his voice filled with uncertainty. Her breaths were shallow and rapid, her pupils dilated, her limbs ice cold, her body in shock--but she would live. I asked if he knew where her phone was so I could call her family. "Her family," he whispered, surely thinking of his other friend still lost in the water, and he walked away slowly as the weight of a light-hearted choice to jump in the waves with his friends came crashing down in an instant.

I did notify the mother of the rescued girl and informed her that they were still searching for Darihanne. "No," she pleaded, "Darihanne, Darihanne, Darihanne," and desperately she told me she would call her mother. She texted me one last time to see she had been found yet. I typed "not yet" and continued the quiet plea, "Darihanne, Darihanne," while the girl in my lap squeezed my hand and said through struggled breaths she'd just found, "please find my friend, please." I saw Darihanne's mother pull herself to the beach, silently wailing in anguish with two people holding her up as she tried to cling to hope during its frenzied battle with time. The most terrible, irreversible thing was unfolding, and it didn't just happen to her that evening, but would continue happening to her every moment she lives without her daughter. At Darihanne's vigil I would hold the hand of a guilt-ridden woman who broke down; "I saw them go in" she sobbed, "I didn't know she would die." I cried with my former students, her classmates, who loved her, messaged with her devastated teachers, read about her siblings, hugged officers who were also reduced to powerless witnesses, and I apologized to her friend, that boy who I did not hold when his life, too, was forever changed. I would see him again at the park a month later with a group of teens who were pushing my son and the other little kids on a spinning structure. Darihanne should have been there, and I wish I could have met the girl who changed my world when she left ours. We could never possibly measure the impact of a drowning death, but we can prevent the next one.

Aside from the ubiquitous nature of water, the stigma around drowning is the greatest threat to prevention efforts. Stigma emboldens the commenter who insinuates that a thirteen-year-old deserved to die when she made the choice to enter the water playfully with friends or the legislator who thinks even with prevention measures someone will still drown so why invest, or the swimmer who believes it can't happen to him. If a city is to invest in tourism, recreation, or even costly rescue attempts on any body of water in their jurisdiction, they must be charged with investing in water safety because a life cannot rest on the "should haves" of a guilt-ridden witness to this leading killer. Darwinistic excuses need to be confronted. Can we call victims not smart enough if we aren't teaching them about Lake Michigan's dangerous currents? Can we call them not strong enough if we are not providing equitable access to survival swimming classes? Would we ever blame a car accident victim for getting in the car? No. We give them seat belts, PSA announcements, driving classes, tests, and trained officers to enforce rules. Similarly, there needs to be layers of protection between a child's decision to play in public water during daylight hours in a hot summer month and their death. So please, when inevitably someone questions the investment, confront the stigma and remember Darihanne.

Halle Quezada: mom, teacher, and witness to tragedy

Purpose

The Chicago Water Safety Task Force is dedicated to reducing drownings in the city of Chicago by coordinating multiple agencies to create effective policy and programming that establish a culture of water safety and set a standard for drowning prevention efforts in the Great Lakes region.

Members

Alderman Joe Moore convened the task force in response to a concerned community and over 2600 signatures on a petition calling for more preventative safety measures after another child drowned during daylight hours on a Chicago beach in his ward. Members were invited from multiple stakeholder agencies and represent a commitment to meaningful change.

- Adam Abajian, Recreation Program Manager, City of Evanston Lakefront Operations, and former Chicago Park District lifeguard
- Dave Benjamin, Executive Director, Great Lakes Surf Rescue Project
- Katy Bradford, Assistant Lakefront Manager, Wilmette Park District
- Mary Kate Daly, Executive Director, Lurie Children's Hospital Healthy Communities
- Ronald Dorneker, Deputy District Chief (ret.), Marine and Dive Operations, Chicago Fire Department
- Eric Fischer, Manager of Beaches and Pools, Chicago Park District
- Eileen Hare, Health and Physical Education Manager, Chicago Public Schools
- Amy Hill, Project Manager, Injury Free Coalition for Kids, Lurie Children's Hospital
- Carol Kim, Project Manager, Chicago Park District
- Kim Kreiling, Natural Resources Specialist, Coastal Management Program, Illinois Department of Natural Resources
- Paul Mack, Lieutenant, Chicago Police Department Marine Unit
- John Masters, Chicago Park District Rescue Unit
- Halle Quezada Rasmussen, Co-Founder, Chicago Alliance for Waterfront Safety
- Timothy Walsh, Chief of Special Operations, Chicago Fire Department
- Lucas Wise, Sergeant, Chicago Police Department Marine Unit
- Rebecca Wear Robinson, President, Make the Minute Matter, Inc.

Acknowledgements

Chicago is committed to leading efforts in the Great Lakes region to decreasing drowning deaths by following globally recognized best practices and incorporating the unique needs of our population and geographical challenges. The Chicago Water Safety Task Force wishes to thank and acknowledge the following organizations for sharing their expertise, recommendations, and existing drowning prevention plans with the City of Chicago.

- | | |
|--|---|
| • American Academy of Pediatrics | • SafeKids |
| • Australian Water Safety Council | • UK National Water Safety Forum |
| • Canadian Drowning Prevention Coalition | • Washington State Open Water Drowning Prevention |
| • Centers for Disease Control and Prevention | • Water Safety Ireland |
| • Great Lakes Water Safety Consortium | • WaterSafety USA |
| | • World Health Organization |

Table of Contents

Forward	ii
Purpose.....	iii
Members	iii
Acknowledgements	iii
Background and Context	1
The Current State of Drowning	1
Fiscal Considerations	1
Situational Assessment	2
Review of Available Data	2
Assessment of Current Efforts	2
Relevant Stakeholders.....	3
Policy Recommendations	4
Limitations and Barriers	5
Geographical Considerations	5
Cultural Considerations	5
Next Steps	5
References.....	6

Background and Context

The Current State of Drowning

Drowning was declared a hidden global epidemic by the World Health Organization (WHO) in 2014.¹ In the U.S., drowning is the fifth leading cause of unintentional injury death, with about ten people drowning each day. Two of the ten people are children aged 14 or younger. For every child that dies from drowning, another five children are treated in emergency departments for nonfatal submersion injuries. More than 50% of drowning victims treated in emergency departments require hospitalization or further care. According to the Centers for Disease Control and Prevention (CDC), nonfatal drowning injuries can cause severe brain damage that may result in long-term disabilities such as memory problems, learning disabilities, and permanent loss of basic functioning (e.g., permanent vegetative state).²

In the United States, drowning is the number one leading cause of death after birth defects for children aged one to four years. It is the second leading cause of unintentional injury death for children aged one to 14. Adolescents (15-19 years of age) have the highest fatal drowning rate in natural water settings. This age group alone makes up half of childhood drownings in natural water. Males make up nearly 80% of drowning victims and a disproportionate number of black youths are drowning.^{3,4} Drowning is also the 6th leading cause for on-duty police officer fatality in the U.S.⁵

The Centers for Disease Control and Prevention (CDC) found that the main factors that affect drowning risk in natural settings are lack of swimming ability, lack of barriers to prevent unsupervised water access, lack of close supervision while swimming, location, failure to wear life jackets, and alcohol use.⁶ Childhood drowning is strongly associated with lack of adequate supervision.⁷ Twenty-nine percent of caregivers failed to provide appropriate supervision for their children under 5-years-old at the beach. Almost half (46%) of caregivers did not provide close supervision for their 5–9-year-olds.⁸

In the U.S., the United States Lifesaving Association (USLA) estimates the chance that a person will die of drowning while attending a beach protected by USLA affiliated lifeguards is 1 in 18 million visits. From 2005 to 2009, five times more drowning fatalities were reported at unguarded sites compared with guarded sites.⁹ Lifeguarded beaches also have a higher survival rate of resuscitation incidents when victims had been swimming outside patrolled areas before rescue.¹⁰

Prevention is imperative as, unlike other injuries, mortality and morbidity is determined almost exclusively on the scene of the incident by how quickly the drowning person is removed from the water and how quickly proper resuscitation efforts are initiated.¹¹ The vast majority of drowning incidents are considered preventable, and evidence-based interventions to mitigate the risks are the most vital intervention by which to reduce drowning.¹²

CDC research has found three main drowning prevention practices:

1. Improve swimming skills
2. Learn CPR
3. Wear life jackets¹³

Fiscal Considerations

The medical costs of childhood drownings in the U.S. in 2015 were estimated at \$68.5 million by Safe Kids Worldwide.¹⁴ A single drowning event on the Great Lakes necessitating coast guard deployment can

cost \$27,000/hour, not inclusive of the cost of ambulance and ground resources, with coast guard searching nonstop the first 24-48 hours. The fiscal and personal cost of both nonfatal and fatal drownings remains vast.¹⁵

We lack solid data on the cost of nonfatal drownings in the U.S. In Australia, they estimate the average cost per nonfatal drowning incident to be AUS \$400,000, which translates to \$879,184 U.S per nonfatal drowning incident.¹⁶ The medical costs of childhood drownings in the U.S. in 2015 were estimated at \$68.5 million.¹⁷

Situational Assessment

Review of Available Data

The City of Chicago currently has no consolidated data for fatal and nonfatal drownings. The City lacks coordination of data gathering efforts between stakeholders to assess the number and cost of fatal and nonfatal drownings or drowning rates across race/ethnicity, age, gender, or hometown. However, the Great Lakes Surf Rescue Project collects drowning data from published accounts, which only includes drownings that receive media attention. Based on their data, there have been 733 Great Lakes drownings since 2010, 330 of which occurred in Lake Michigan. This makes Lake Michigan the deadliest of the Great Lakes.

The Chicago Fire Department analyzed rescues in Chicago, the vast majority (86%) are between Montrose and the Planetarium within 100 feet of the shoreline. This study complements research that Lurie Children's Hospital is conducting on fatal and nonfatal drownings hospitalizations and outcomes.

Assessment of Current Efforts

The Chicago Park District recently began implementing a number of operations improvements to enhance water safety. The Park District posted new signs and flags to better inform beachgoers that it is only safe to swim when lifeguards are present. The Park District flies red flags when beaches are unguarded and during dangerous conditions. Given the lack of awareness of water safety in Chicago, the red flag is currently deemed to be the most effective option. New signs also advise the public of hazards that exist at our lakefront – especially around structures like piers and jetties.

Additionally, the Chicago Park District conducted a nationwide survey of lifeguard hours and staffing to determine how to best use limited resources in making our lakefront safe. They are considering a budget proposal to extend lifeguard hours at Chicago beaches.

Amidst calls to extend lifeguard hours, a deeper challenge was discovered that goes beyond simply identifying a funding source. Chicago does not have enough qualified lifeguards and needs to build its pipeline of candidates to staff all its beaches this coming summer and beyond.

The Chicago Park District is building its lifeguard workforce by adding more lifeguard classes (including within Chicago Public Schools facilities), expanding opportunities to take certification tests, and creating partnerships to recruit guards from throughout the city. The Park District is stymied in these efforts by a lack of adequate facilities and programming to make water safety part of the culture for all Chicagoans. Chicago Public Schools and the Park District are working to maximize swimming opportunities throughout Chicago. The Park District also provides CPR trainings for residents.

Chicago Public Schools is in compliance with Lauren's Law, which requires all high school students in Illinois to receive instruction on how to properly administer hands-only CPR and how to use an AED. CPR/AED instruction is built into the 9th-grade Health Education curriculum. CPS is also in the process of updating their student travel guidelines and the water policy letter to ensure students and staff are made aware of the risks of entering water.

The Chicago Fire Department has equipped all of its land and water vehicles with water rescue equipment and is developing a public education campaign to inform the public on how to report accurately the nature and location of a water emergency. All fire response boats are Advanced Life Support certified (ALS) as of April 1, 2019. The additional new fast boat is in the final stages of procurement, construction is expected to begin this year. When placed in service it will also be ALS. Additionally, CFD is purchasing an automated chest compression device that allows for continuous CPR while transferring on/off the boat and over sand.

Relevant Stakeholders

Current Task Force Members

- Chicago Fire Department
- Chicago Park District
- Chicago Police Department
- Chicago Public Schools
- City of Chicago
- City of Evanston
- Great Lakes Surf Rescue Project
- Illinois Department of Health
- Illinois Department of Natural Resources
- Lurie Children's Hospital
- Make the Minute Matter
- Wilmette Park District

Potential Stakeholders for Implementation Education and Outreach

- American Red Cross – Chicago
- Area Hospitals
- Boy Scouts of America
- Chicago Sports Teams
- Diversity in Aquatics
- Girl Scouts of America
- Medicaid
- Religious Groups
- Swim Schools
- U.S. Coast Guard
- U.S. Navy - Great Lakes Naval Base
- Water Sport Rental Companies
- Yacht Clubs
- YMCA – Chicago

Data Collection and Evaluation

- Area Hospitals
- University of Chicago - Harris School of Public Policy

Funding Sources

- Major Insurance Companies

Policy Recommendations

1. Chicago Park District should expand lifeguarding capacity at Chicago beaches by restoring the lifeguard hours and increasing the budget for lifeguard staffing, training and recruitment; lifeguard feeder programs, and water quality testing.
2. Municipalities and park districts throughout the Chicago area should use consistent language and visuals for water safety signs and educational materials including but not limited to information about dangerous currents, appropriate response for bystanders during a drowning emergency, and off-season risks like cold water shock and staying off the ice.
3. The City of Chicago and other government entities with jurisdiction over lakefront access points should bar entry into the water outside of lifeguard hours and at high-risk locations and post warnings with effective messages to deter risky behavior. High risk locations include areas where structural currents are present and areas inaccessible to patrol and response.
4. The Office of Emergency Management and Communication should update rescue and response procedures, including call taker protocols, to collect and communicate information to first-responders enroute to the scene of an emergency.
5. The Chicago Park District should install a numbering location system at all beaches, clearly visible from water looking towards land, for callers to give accurate position.
6. The City of Chicago should equip all police vehicles rescue equipment for water emergencies and rescues in addition to the standard personal protective equipment (PPE).
7. The Chicago Office of Emergency Management and Communication, Fire Department and Police Department should train all police and fire personnel to consistently manage the scene of drownings and non-fatal drownings.
8. The City of Chicago and water safety advocates should train Chicago residents in water safety, with an emphasis on youth and communities most at risk of drowning. Chicago Public Schools should provide water safety information, similar to fire, tornado, and active shooter response and the Chicago Fire and Police Departments and the Chicago Park District should conduct annual water safety demonstrations and outreach events.
9. The State of Illinois should mandate and fund water safety education for all Illinois students, teachers, and all educational staff.
10. Chicago area governments and injury prevention organizations should use consistent standards for drowning and non-fatal drowning data collection, compiled by one central source. Data should be used in the creation and evaluation of policies and prevention programs.
11. Water safety advocates and professionals should create a Chicago region prevention-centered water safety plan to reduce the incidence of drownings and non-fatal drownings.
12. Chicago Park District should continue to work with communities to offer culturally responsive access to swim lessons with an emphasis on water safety competence and skills.
13. The Chicago Park District should partner with community organizations to have life jacket loaner stations at all beaches.
14. We, as a community of water safety advocates, should affirm the water safety rules of the City of Chicago, Chicago Park District, Chicago Public Schools and the various governments of the Chicago region.

Limitations and Barriers

Geographical Considerations

Chicago has extensive access to open water along Lake Michigan, with dangerous natural and manmade currents, variable sand bars, boat traffic, pedestrian walkways with significant drop offs to water level, bridges, and lagoons. Chicago parks and forest preserves have variable bodies of water and the City is home to many private and public pools.

On top of a 19-mile-long heavily used recreational Lakefront Trail along Lake Michigan, Chicago has an additional 11 miles of coastline. The City experiences extreme temperature fluctuations in both air and water. In the hot summer months, the lake attracts many residents to cool off. For much of the year the water temperature is very cold, which can result in cold water shock, reducing the ability to self-rescue, even for avid swimmers. Annually, as the lake freezes, first responders are dispatched to rescue civilians who have fallen through the ice.

The Great Lakes differ from other bodies of water in terms of the frequency of waves, decreased buoyancy of fresh compared with saltwater, variable depths from uneven sand bars, and sudden storms. According to the National Weather Service, approximately 16% of drownings in the Great Lakes are due to currents and waves.¹⁸

The Chicago River is a system of rivers and canals with a combined length of 156 miles that run through the city with 38 movable bridges. The Chicago River Corridor Development Plan created in 1998 is increasing public access to the river through the creation of overlooks and public parks with a goal of developing the river as a recreational amenity with continuous multi-use paths along at least one side.

Cultural Considerations

Chicago has a population of 2.7 million people, speaking over 40 languages, roughly 55 million visitors, and significant water recreation. Unlike coastal cities with a beach culture, which typically have a higher level of awareness and greater potential understanding of water safety, Chicago is defined as a city of “bathers” not “swimmers”. This likely has resulted in a population with relatively low awareness about water safety. Chicago also faces the challenge of engaging not just the local population, but visitors from the surrounding area who may have some knowledge of Lake Michigan, and non-local tourists who likely have no knowledge of Lake Michigan and other water dangers, dangers which may be very different from those they encounter at home.

Given the extensive cultural variability, maximizing access to swim instruction in response to culturally limiting factors (swim apparel, beliefs, traditions, single-sex aquatic settings, days of rest etc.) can be complicated. From a socioeconomic standpoint, the multiple swim lessons required to achieve basic water competency can be costly or difficult.

Next Steps

- Lakefront Water Safety Education Event
- Development of Implementation Plan, in accordance with the 2017 World Health Organization recommendations.
- Assessment of Required Human and Financial Resources

References

- ¹ World Health Organization. Global report on drowning: preventing a leading killer [online]. [cited 2019 March 21]. Available from URL: https://www.who.int/violence_injury_prevention/global_report_drowning/en/
- ² Centers for Disease Control and Prevention. Unintentional Drowning: Get the Facts [online]. [cited 2019 March 21]. Available from URL: <https://www.cdc.gov/homeandrecreationalafety/water-safety/waterinjuries-factsheet.html>
- ³ Saluja G, Brenner RA, Trumble AC, Smith GS, Schroeder T, Cox C. Swimming Pool Drownings Among US Residents Aged 5–24 Years: Understanding Racial/Ethnic Disparities. *American Journal of Public Health*. 2006; 96(4):728-733. DOI:10.2105/ajph.2004.057067.
- ⁴ Centers for Disease Control and Prevention. Drowning [online]. [cited 2019 March 22]. Available from URL: <https://www.cdc.gov/healthcommunication/toolstemplates/entertainmented/tips/Drowning.html>
- ⁵ National Lake Enforcement Officers Memorial Fund. Causes of Law Enforcement Deaths [online]. [cited 2019 March 26]. Available from URL: <https://nleomf.org/facts-figures/causes-of-law-enforcement-deaths>
- ⁶ Centers for Disease Control and Prevention. Unintentional Drowning: Get the Facts [online]. [cited 2019 March 21]. Available from URL: <https://www.cdc.gov/homeandrecreationalafety/water-safety/waterinjuries-factsheet.html>
- ⁷ Brenner, R.A. (2003). Prevention of drowning in infants, children, and adolescents. *Pediatrics*, 112(2), 440–445.
- ⁸ New South Wales Water Safety Taskforce. (2002). Analysis of drownings involving children aged five years and under in NSW. Report prepared by NSW Injury Risk Management Research Centre. Concord West, DC: New South Wales Water Safety Taskforce.
- ⁹ United States Lifesaving Association. (2009). United States Lifesaving Association Data. Retrieved from: <http://www.usla.org/statistics/public.asp>
- ¹⁰ Moran, Kevin; Quan, Linda; Franklin, Richard; and Bennett, Elizabeth (2011) "Where the Evidence and Expert Opinion Meet: A Review of Open-Water Recreational Safety Messages," *International Journal of Aquatic Research and Education*: Vol. 5: No. 3, Article 5. DOI: 10.25035/ijare.05.03.05
- ¹¹ World Health Organization. Global report on drowning: preventing a leading killer [online]. [cited 2019 March 21]. Available from URL: https://www.who.int/violence_injury_prevention/global_report_drowning/en/
- ¹² Rogmans, W., & Wilson, J. (2006a). The prevention of drowning. In J.J.L.M. Bierens (Ed.), *Handbook on drowning: Prevention, rescue, treatment* (pp. 77–131). Heidelberg: Springer-Verlag.
- ¹³ Centers for Disease Control and Prevention. Unintentional Drowning: Get the Facts [online]. [cited 2019 March 21]. Available from URL: <https://www.cdc.gov/homeandrecreationalafety/water-safety/waterinjuries-factsheet.html>
- ¹⁴ Safe Kids Worldwide. Fast Facts: Open Water Drowning by the Numbers [online]. [cited 2019 March 25]. Available from URL: https://www.safekids.org/sites/default/files/fast_facts_ow_drowning.pdf
- ¹⁵ OBryan T, Stanford D, Macsarlave-Faes M, Lopez L, Bailey P. Pier Safety Presentation. February 18AD. A collaboration between U.S. Coast Guard, Army Corps Engineers, and local historical preservation societies for a water safety initiative in Barrien County Michigan
- ¹⁶ Royal Life Saving Australia. Nonfatal Drowning [online]. [cited 2019 March 21]. Available from URL: <https://www.royallifesaving.com.au/facts-and-figures/key-facts/medical/nonfatal-drowning>
- ¹⁷ Centers for Disease Control and Prevention. CDC WONDER [online]. [cited 2018 August 18]. Available from URL: <http://wonder.cdc.gov/>

¹⁸ National Weather Service. Great Lakes Current Incident Database [online]. [cited 2019 March 21]. Available from URL: <http://www.miseagrant.umich.edu/dcd/dcdsearch.php>