

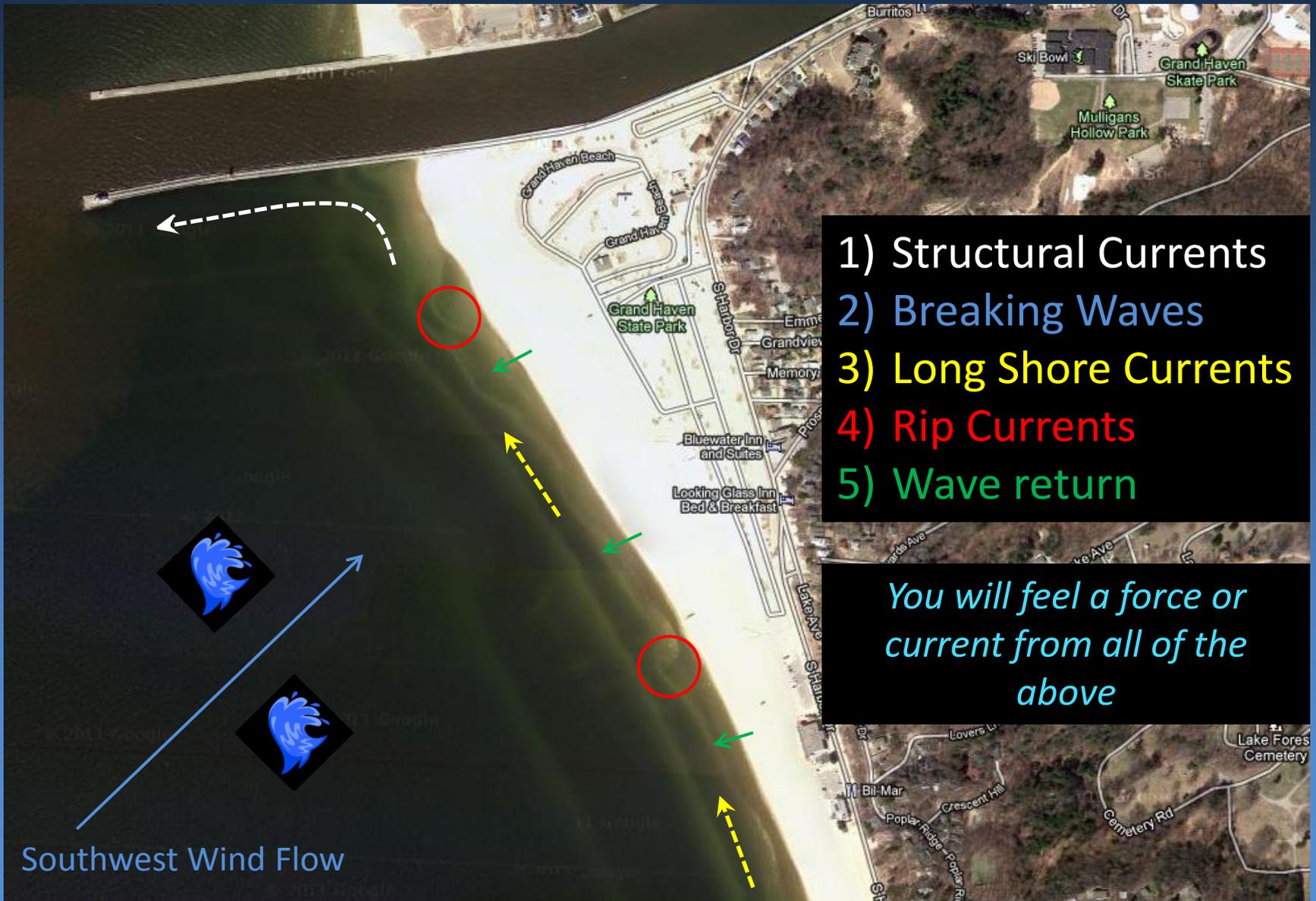
# Great Lakes Beach Hazards

...An Overview...



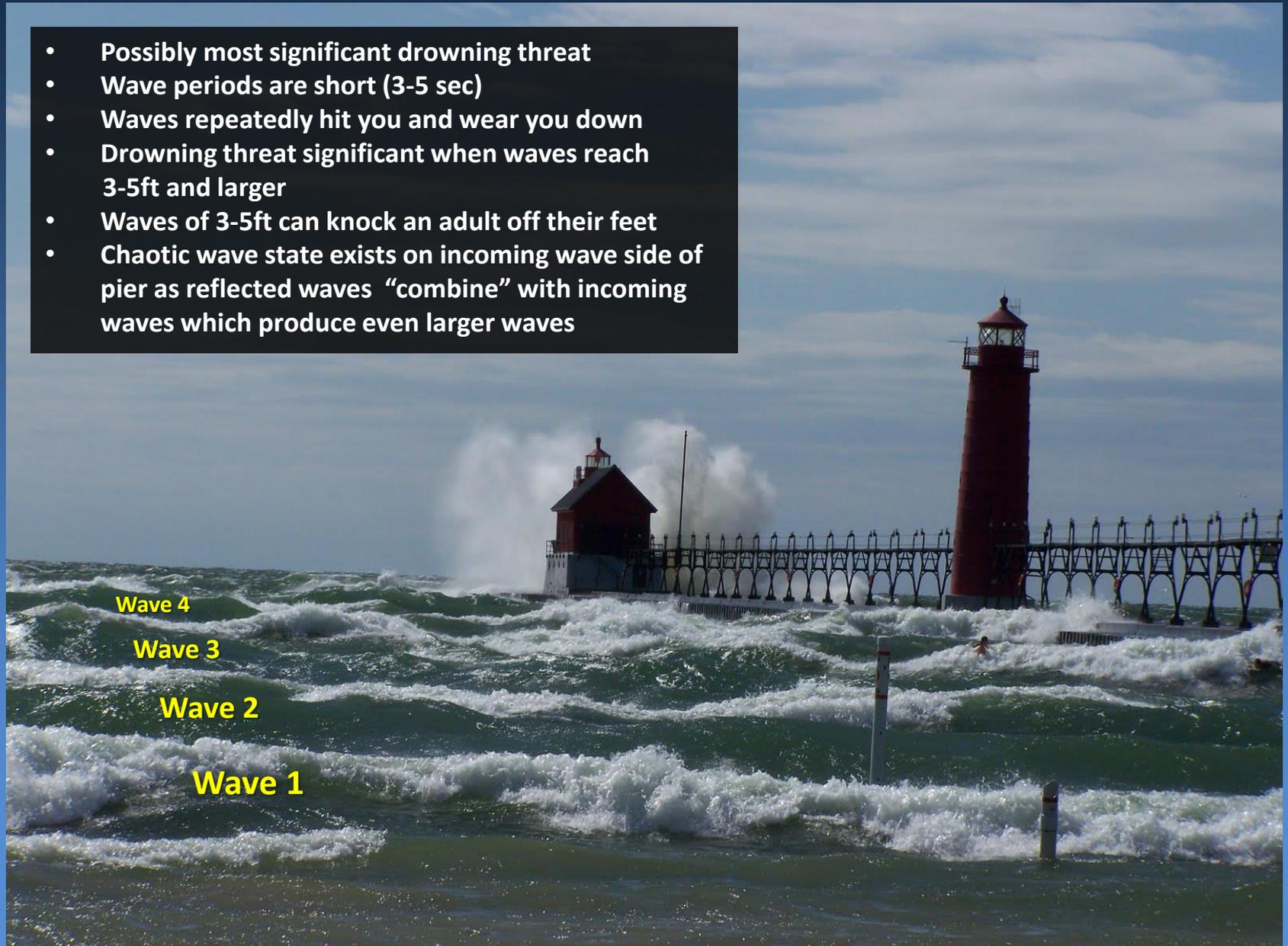
*Rope line... searching for missing swimmer  
A scene we want to try to eliminate through education and outreach*

# An Overview of all the threats



# Great Lakes Beach Hazards... Waves

- Possibly most significant drowning threat
- Wave periods are short (3-5 sec)
- Waves repeatedly hit you and wear you down
- Drowning threat significant when waves reach 3-5ft and larger
- Waves of 3-5ft can knock an adult off their feet
- Chaotic wave state exists on incoming wave side of pier as reflected waves “combine” with incoming waves which produce even larger waves



# Great Lakes Beach Hazards... Waves



## What to know...

- Waves come rapid fire, there is no let up, usually every 3 to 5 seconds
- Great Lakes waves are unlike ocean waves where you often have time to steady yourself for the next wave.
- Waves are an underrated swimming hazard at Great Lakes beaches
- If white water is present waves are likely 3 feet or higher and pose a danger

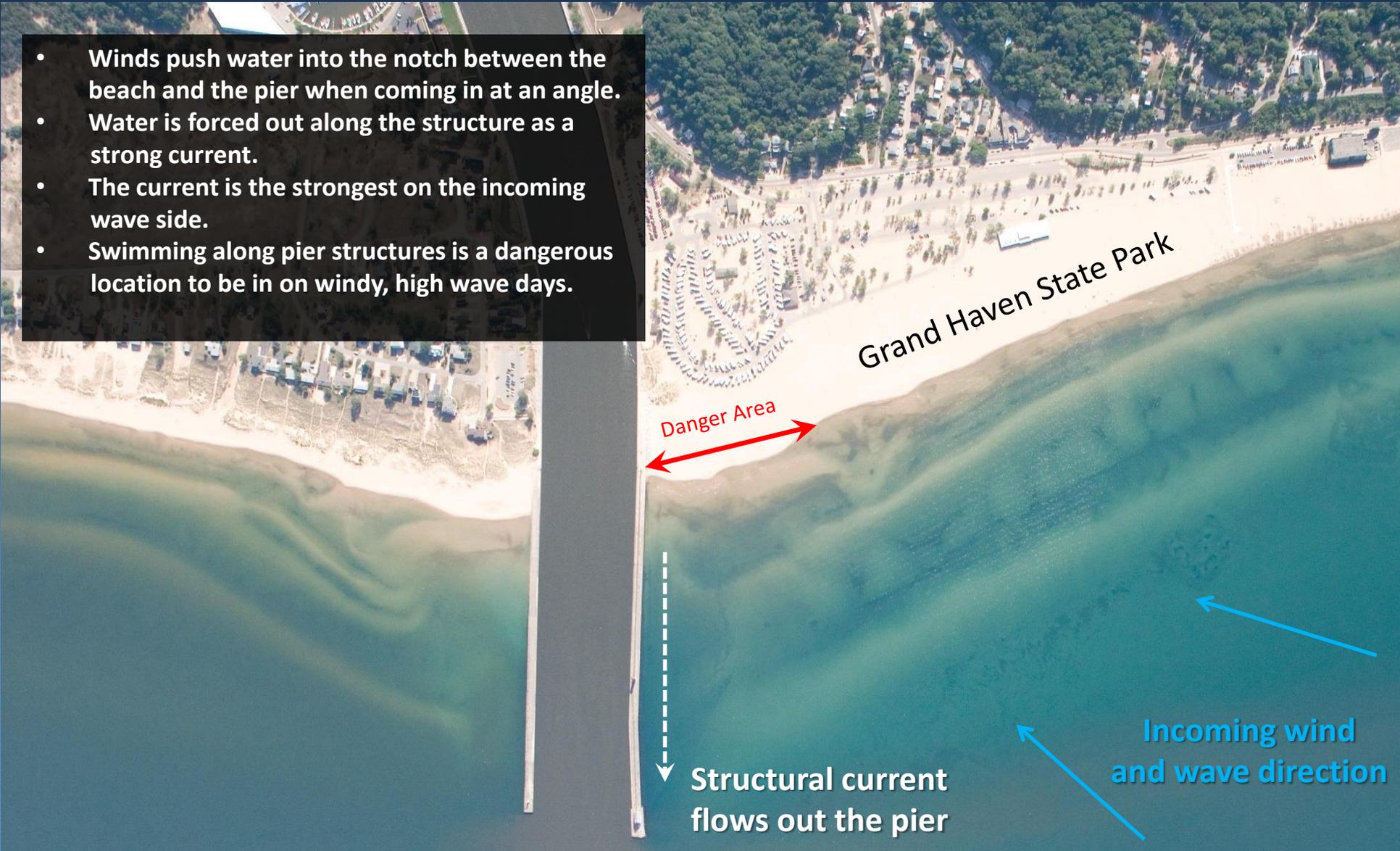
## What to do...

- Know your swimming ability before you enter the waves
- Do not over estimate your fitness level or swimming ability... you can get in trouble quickly

# Great Lakes Beach Hazards...

## Structural Currents

- Winds push water into the notch between the beach and the pier when coming in at an angle.
- Water is forced out along the structure as a strong current.
- The current is the strongest on the incoming wave side.
- Swimming along pier structures is a dangerous location to be in on windy, high wave days.



# Great Lakes Beach Hazards... Structural Currents



## What to know...

- The pier (steel, concrete and rock) structure focuses strong currents
- The water has no where else to go but out along the pier ( Grand Haven Pier is 1/4mi long ! )
- The current is often too strong to swim back into (i.e., towards the beach)
- Swimming out of it sideways will likely send you back into oncoming large waves
- What to do...
- Don't put yourself in this situation
- Best bet: do not swim within 100 yards of the pier, especially the side with incoming waves
- Do not pier jump as you could be jumping directly into a structural current
- If caught in the current next to the pier get the attention of people on the pier
- Witnesses...throw a life ring or floatation device if available

# Great Lakes Beach Hazards...

## Rip Currents



- Channels or gaps in the 1<sup>st</sup> and 2<sup>nd</sup> sand bars can lead to rip currents under the right conditions
- The channels can be observed from the tops of dunes during the morning and midday hours
- Water can rip offshore as it is forced through the gap (i.e., like a thumb over a hose)

# Great Lakes Beach Hazards...

## Rip Currents



### What to know...

- Rip Currents can form in gaps in sand bars
- Water can *surge* offshore through the gap after it washes up on the beach with a wave

### What to do...

- If you are being pulled away from shore, not directly adjacent to a pier...
- Try not to panic
- Float with the current in a horizontal swimming position to conserve energy until it slows
- Then swim parallel to shore until out of the current
- When you are out of the current swim back to shore

# Great Lakes Beach Hazards...

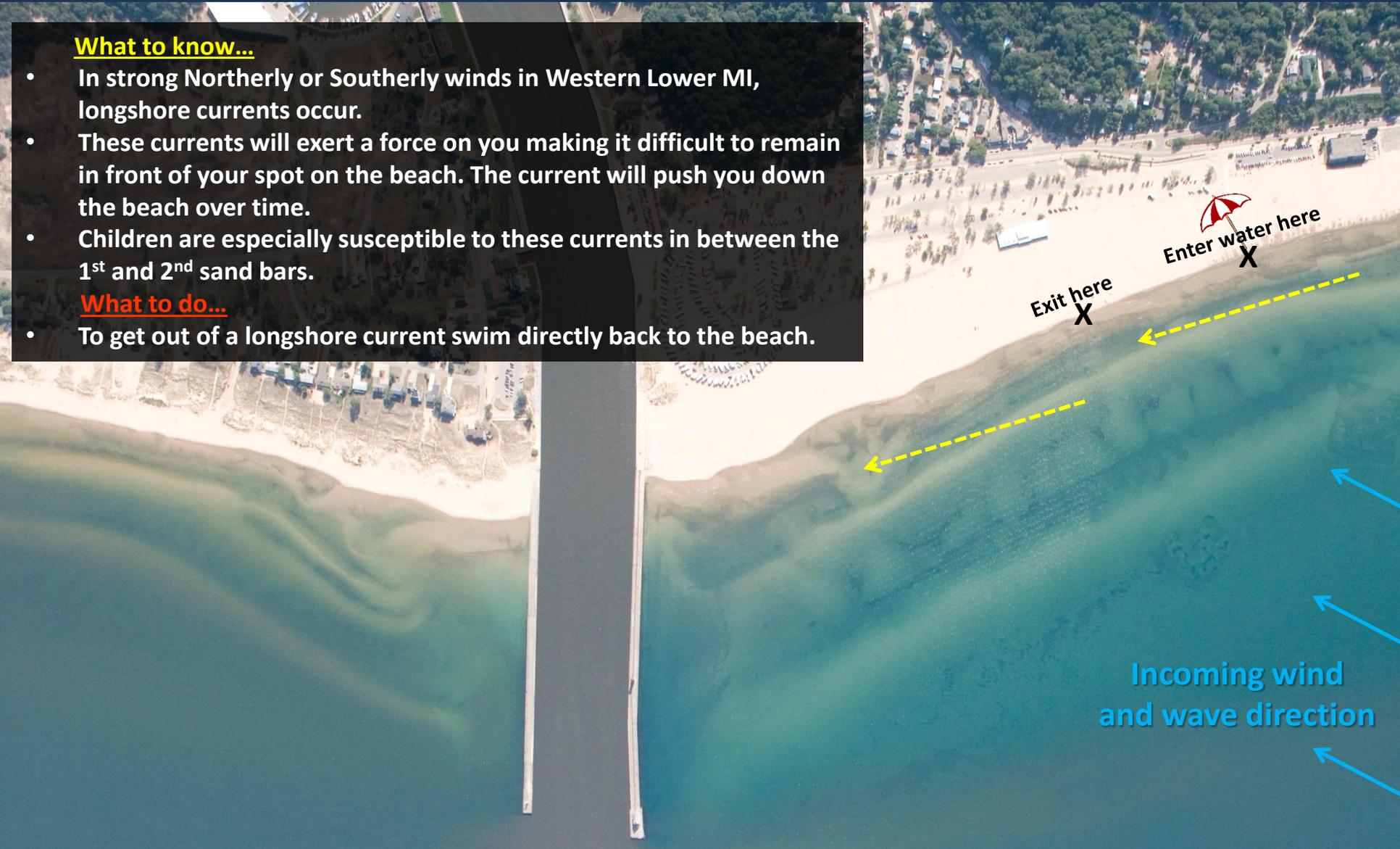
## Longshore Currents

### What to know...

- In strong Northerly or Southerly winds in Western Lower MI, longshore currents occur.
- These currents will exert a force on you making it difficult to remain in front of your spot on the beach. The current will push you down the beach over time.
- Children are especially susceptible to these currents in between the 1<sup>st</sup> and 2<sup>nd</sup> sand bars.

### What to do...

- To get out of a longshore current swim directly back to the beach.





**For More Information Contact:**

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