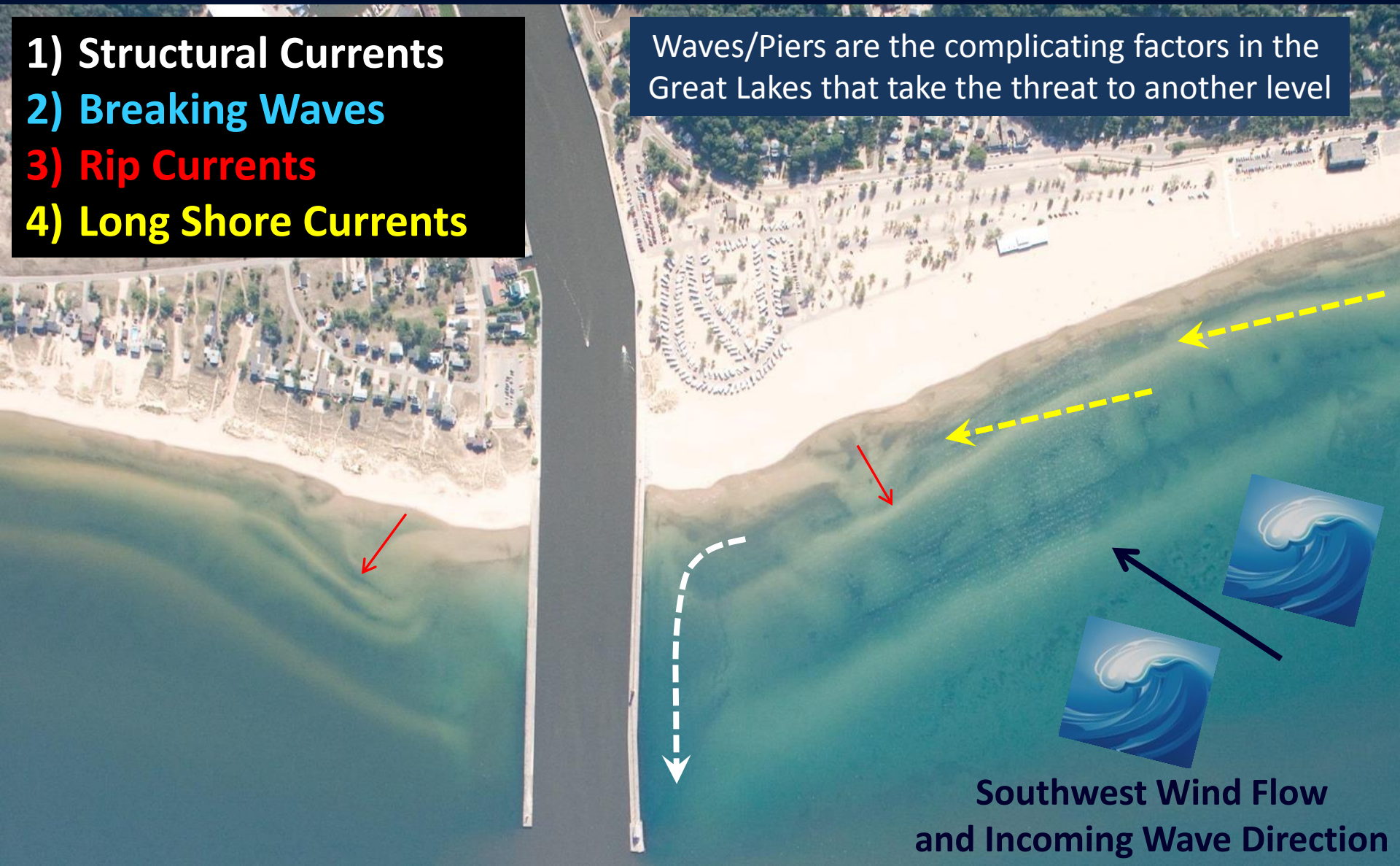
Overview of 4 main Beach Hazards

1) Structural Currents
2) Breaking Waves
3) Rip Currents
4) Long Shore Currents

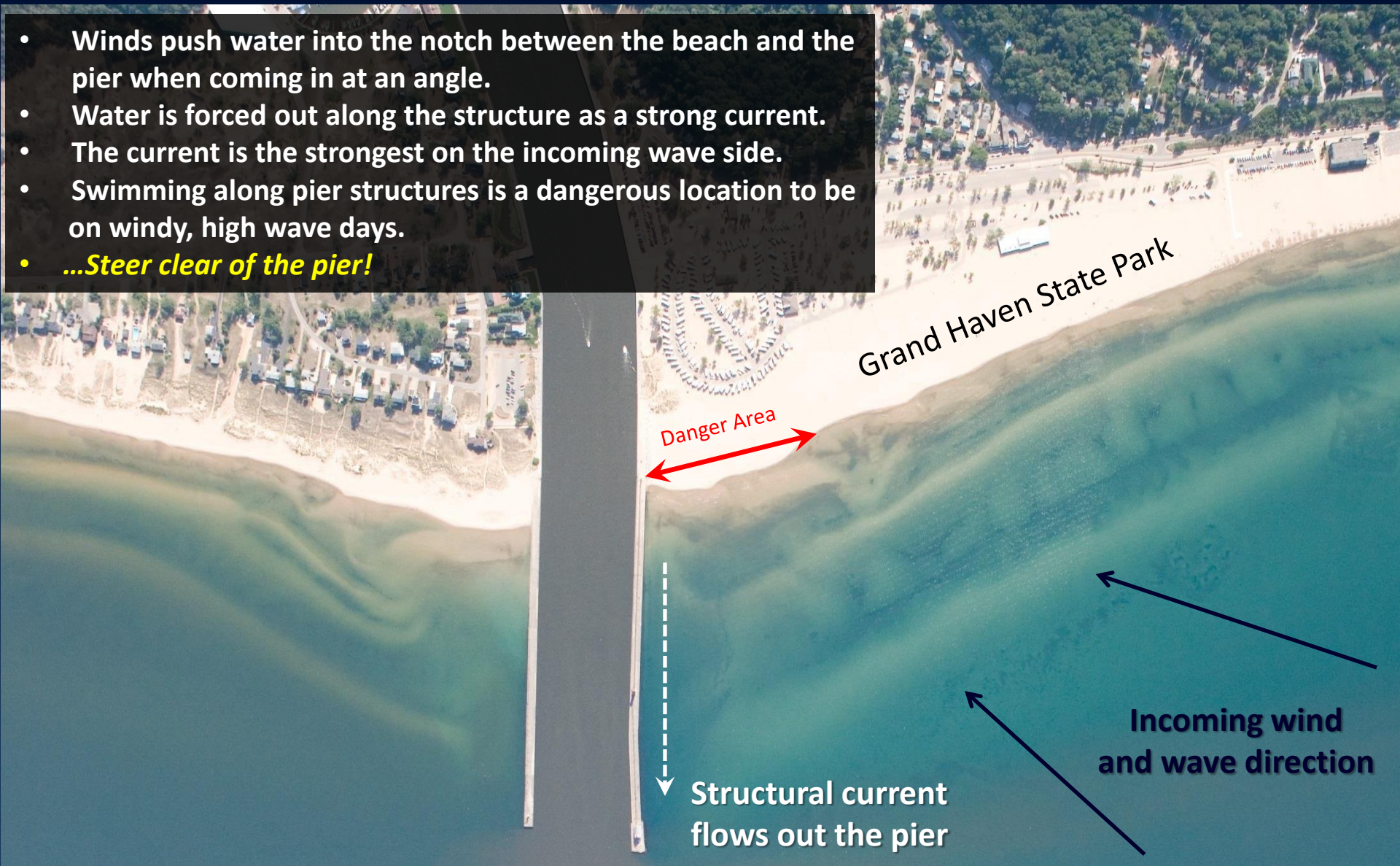
Waves/Piers are the complicating factors in the Great Lakes that take the threat to another level



Southwest Wind Flow
and Incoming Wave Direction

Great Lakes Beach Hazards…

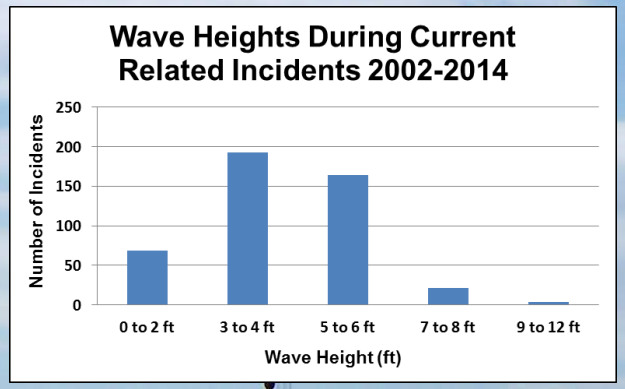
Structural Currents



- 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 on windy, high wave days.
- ***…Steer clear of the pier!***

Great Lakes Beach Hazards… Waves

- Significant drowning threat
- Wave periods are short (3-5 sec)…less close to pier
- Waves repeatedly hit/wear down swimmers (fatigue)
- Drowning threat high when waves reach 3-5ft +
- Waves of 3-5ft can knock an adult off their feet
- When waves increase so do other threats (currents)
- White water shows up when waves reach near 3 feet

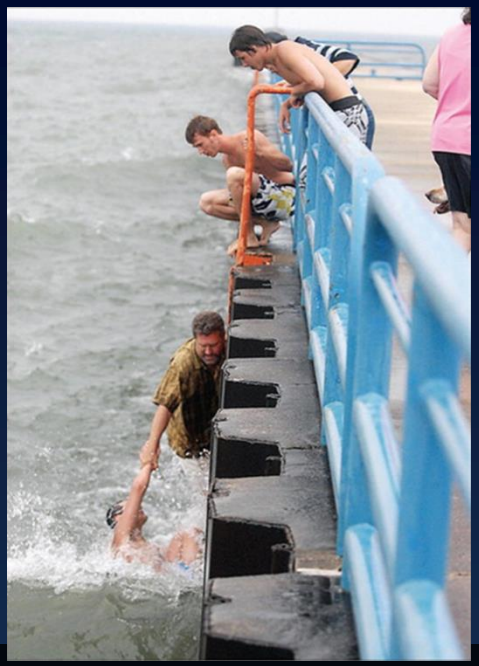


Great Lakes Waves

Waves and Piers

- Solid piers add to wave threat
- "Combined" waves near piers
- Very difficult to swim in
- Threat increases due to structural currents as well

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 (GH Pier is 1/4mi long !)
- The current is often too strong to swim back in to (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
- 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

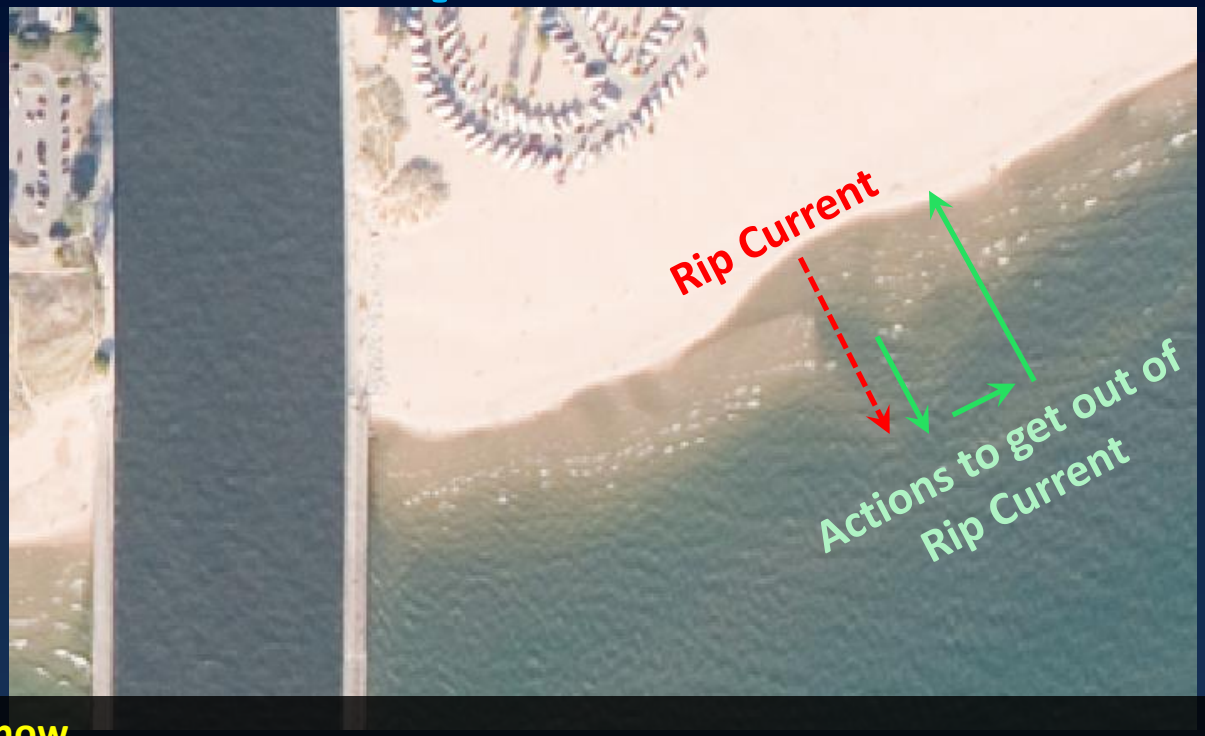
Great Lakes Beach Hazards…

Rip Currents

- Channels or gaps in the 1st and 2nd 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 off shore as it is forced through the gap (i.e. like a thumb over a hose)

Great Lakes Beach Hazards…

Rip Currents



What to know…

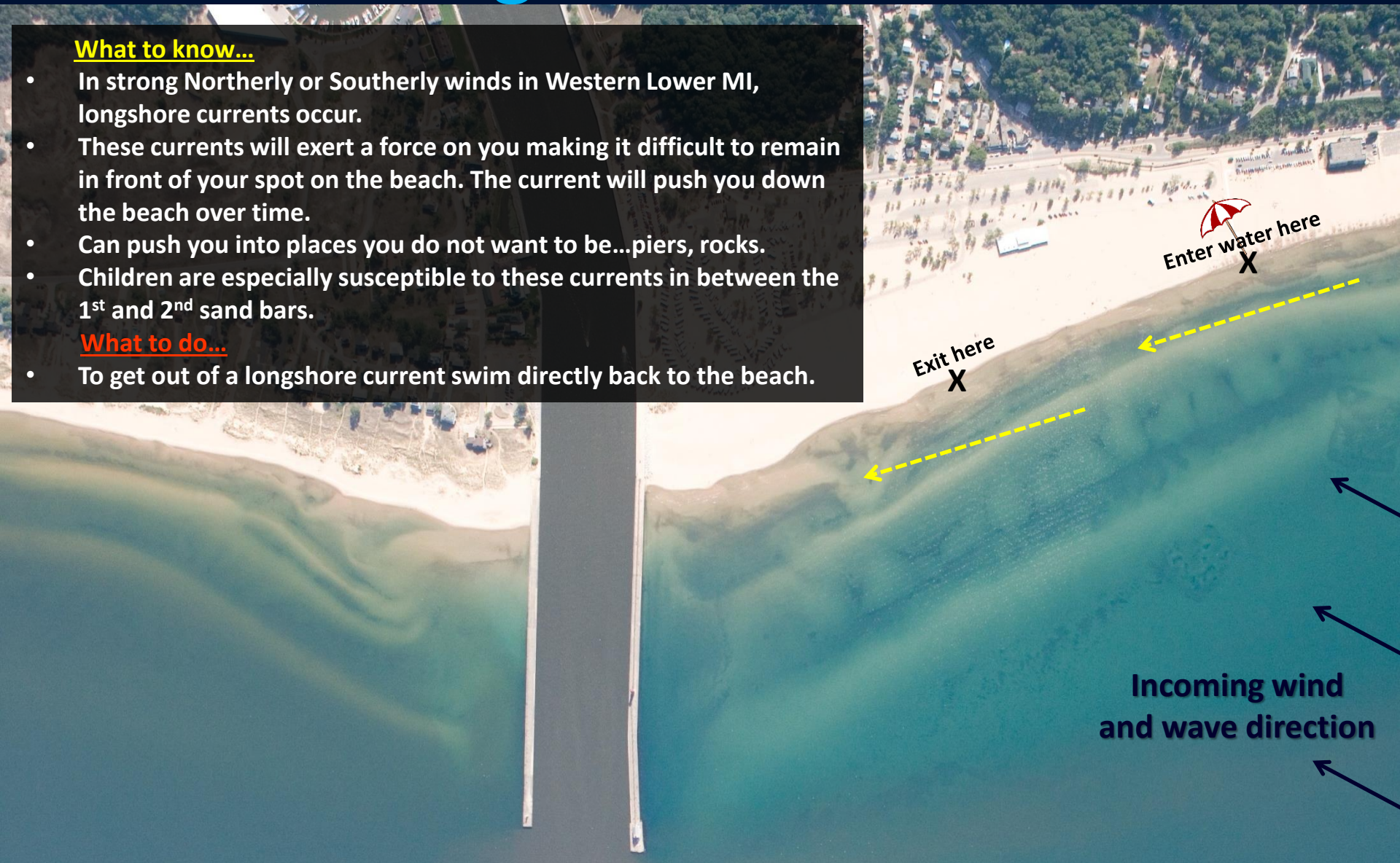
- Rip Currents can form in gaps in sand bars
- Water can *surge* back off shore through the gap after it washes up on the beach with a wave

What to do…

- If you are being pulled away from shore or lake-ward, 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.
- Can push you into places you do not want to be…piers, rocks.
- Children are especially susceptible to these currents in between the 1st and 2nd sand bars.

What to do…

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

Questions contact:
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