

# Implementing Dangerous Currents Best Practices

## Development of an Observation, Forecasting, and Warning System for Rip Currents

Great Lakes Regional Meeting of Coastal Management Programs  
Muskegon, Michigan

Todd Breiby and Gene Clark  
Wisconsin Coastal Management Program  
University of Wisconsin Sea Grant Institute



# Wisconsin State Working Group

- Concurrent effort: WI Coastal Beaches Working Group
- Members: WCMP, UW-Sea Grant, NOAA CSP, NWS, WDNR, UW-Oshkosh, local health and parks departments
- Leverage resources, connections and expertise
- Increase awareness: state beach stakeholders
  - Inform on dangerous currents
  - Inform on best practices
  - Target audiences
  - Safety equipment (types and how/where to deploy)
  - Managing equipment (tagging, storage, loaner programs)

# Wisconsin State Working Group

- Role:
  - Review identified beaches for equipment deployment
  - Review types of equipment for each beach
  - Develop equipment distribution plan
  - Identify equipment maintenance responsibilities
  - Increase awareness of dangerous currents and best practices in coastal communities [www.currentsmart.org](http://www.currentsmart.org)
  - Identify additional resources to expand project in the state
  - Integrate project with Wisconsin's overall beach efforts

# Locations for Safety Equipment

- Fatalities and Rescue Data:
  - Incident Database [www.dangerouscurrents.org](http://www.dangerouscurrents.org) (NWS, MI Sea Grant, MDEQ and MDNR)
  - Great Lakes Surf and Rescue Project <http://glsrp.org>
- Population size at beach location
- Beach usage and visitation
  - Wisconsin Harbor Towns Association

# Safety Equipment Deployment

Wisconsin Beach Locations for Requested Water Safety and Rescue Equipment and targeted public outreach materials - Implementing Dangerous Currents Best Practices, Coastal Storms Project									
Beach Name	Municipality	County	State	Rescue Throw Ring	Rescue Throw bag	Adult Life Vest	Youth Life Jacket	Carlson Rescue Board- 4 Ft.	Lifeguard Rescue Tubes****
Bayview Beach	Ashland	Ashland	WI	2	1	2	5	0	2
Maslowski Beach	Ashland	Ashland	WI	2	0	0	0	0	0
Kreher Beach	Ashland	Ashland	WI	1	0	0	0	0	0
6th Avenue Beach	Ashland	Ashland	WI	1	0	0	0	0	0
Oredock	Ashland	Ashland	WI	0	0	3	5	0	0
Big Bay State Park (1 beach)	N/A	Ashland	WI	2	1	1	1	0	0
Newport State Park (5 beaches)	N/A	Door	WI	5	1	1	1	0	0
Peninsula State Park (1 beach)	N/A	Door	WI	2	1	1	1	0	0
Potawatomi State Park (2 beaches)	N/A	Door	WI	3	1	1	1	0	0
Rock Island State Park (1 beach)	N/A	Door	WI	2	1	1	1	0	0
Whitefish Dunes State Park (1 beach)	N/A	Door	WI	2	1	1	1	0	0
Point Beach State Forest (3 beaches)	N/A	Manitowoc	WI	3	1	1	1	0	0
Doctors Park Beach	Fox Point	Milwaukee	WI	1	0	0	0	0	0
Bradford Beach	Milwaukee	Milwaukee	WI	7	1	5	10	1	0
McKinley Beach	Milwaukee	Milwaukee	WI	2	0	0	0	0	0
South Shore Beach	Milwaukee	Milwaukee	WI	2	0	0	0	0	0
Bender Park Beach	Oak Creek	Milwaukee	WI	1	0	0	0	0	0
Atwater Beach	Shorewood	Milwaukee	WI	3	1	3	5	0	0
Grant Park Beach	South Milwaukee	Milwaukee	WI	2	0	0	0	0	0
Big Bay Beach	Whitefish Bay	Milwaukee	WI	1	0	0	0	0	0
Harrington State Park (4 beaches)	N/A	Ozaukee	WI	8	1	1	1	0	0
North Beach	Port Washington	Ozaukee	WI	0	1	0	0	0	0
South Beach	Port Washington	Ozaukee	WI	0	1	0	0	0	0
North Beach and Zoo Beach	Racine	Racine	WI	4	5	4	4	0	8
Samuel Myers Park Beach	Racine	Racine	WI	1	0		0	0	0
Kohler Andrae State Park (4 beaches)	N/A	Sheboygan	WI	8	1	1	1	0	0
Deland Park Beach	Sheboygan	Sheboygan	WI	2	0	1	0	1	0
King Park Beach	Sheboygan	Sheboygan	WI	0	0	1	0	1	0
<b>Total</b>				<b>67</b>	<b>19</b>	<b>28</b>	<b>38</b>	<b>3</b>	<b>10</b>

Lake Michigan and  
Lake Superior  
beaches

State and local  
public beaches

165 pieces of  
safety equipment

41 coastal beaches

1 coastal structure

7 of 15 coastal  
counties

# Leveraged Resources

- University of Wisconsin-Oshkosh
  - Purchased additional safety equipment to deploy at four coastal beaches in Door County
  - Assisted communities in constructing rescue stations
- WI Coastal Beaches Working Group
  - Importance of dangerous currents and beach safety recognized
  - Incorporated into working group objectives, sustainability
  - Address multiple types of signage at beaches, flag system
  - Identify resources to replace loss or damaged equipment, deployment of equipment to additional beaches

# Thank You



NOAA Coastal  
Storms Program

Brent Schleck

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Sea Grant and  
CZM Partners

WI State Working  
Group

# Development of an Observation, Forecasting, and Warning System for Rip Currents

## **Project Objective**

Improve rip current beach hazard warning by developing an innovative and cost-effective means to characterize, identify and detect rip currents.

## **Project partners**

UW-Madison, UW Sea Grant, MN Sea Grant, WI Coastal Management, NOAA Coastal Storms, NOAA National Ocean Service, GLERL, NOAA National Weather Service, City of Port Washington, City of Duluth and Milwaukee County.

# Project Tasks

- Real-time observation system for rip currents and nearshore waves
  - Mechanistic process-based cross-scale modeling for rip currents
- Integrated Nowcast (real-time) Observation and Forecast Operation System (INFOS)
- Communication, coordination and community education and outreach
  - Leverage communication and outreach from other NOAA Coastal Storms funded projects

# Project Locations

Duluth, MN  
Park Point Beach

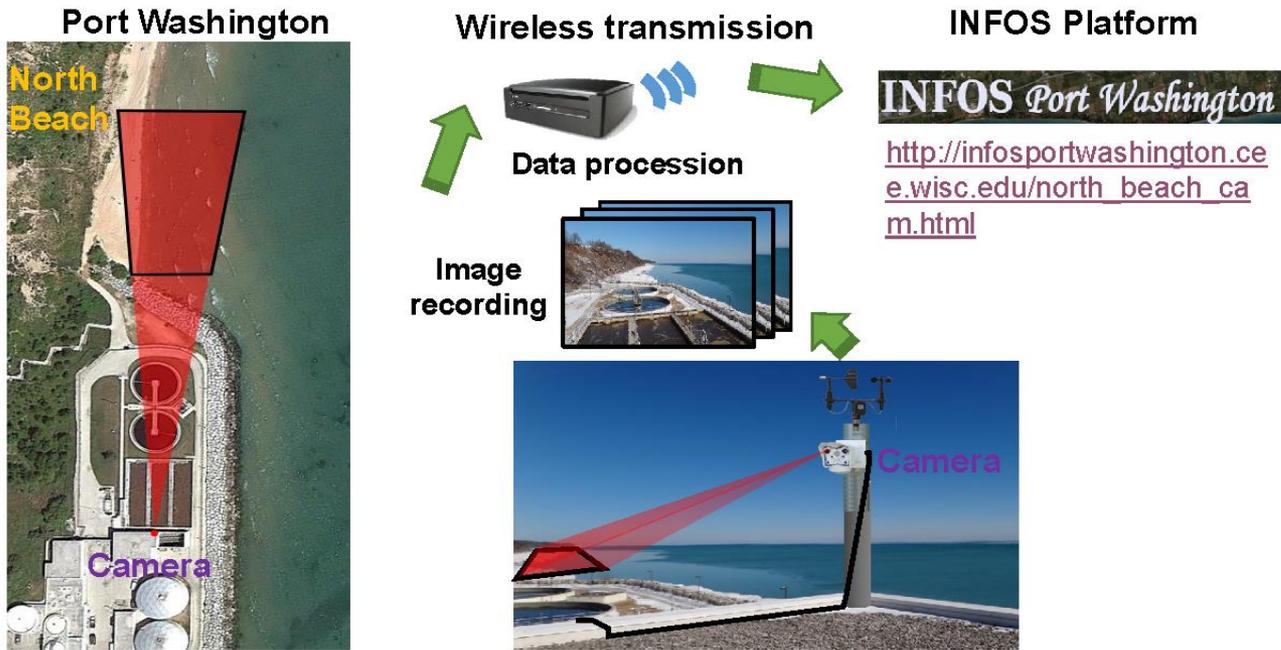


Port Washington, WI  
North Beach

Milwaukee, WI  
Bradford Beach

# Real-Time Data

## Real-time Imaging System



**Bradford and McKinley Beaches, Milwaukee**



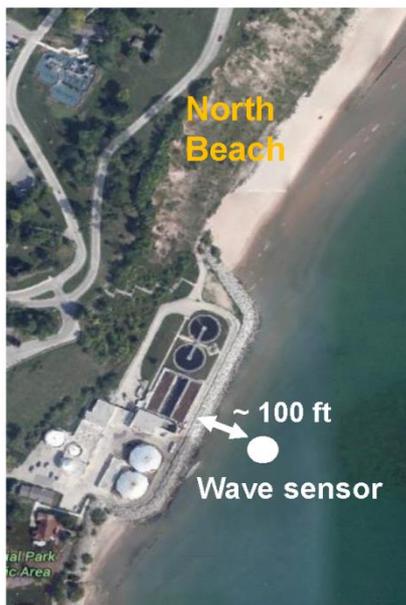
**Park Point Beaches, Duluth**



# Real-Time Data

## Real-time Wave Observation System

Port Washington



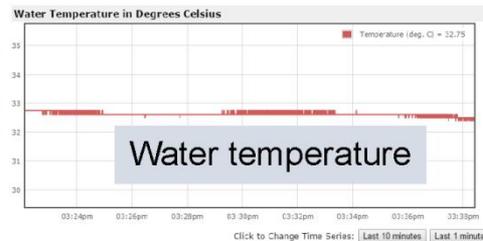
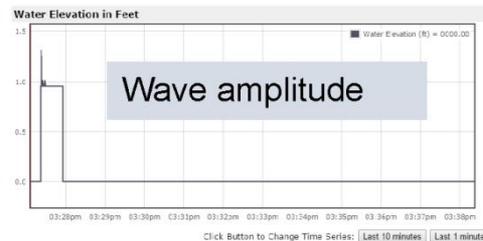
Wave Sensor and Frame



Live demo

[http://infosportwashington.cee.wisc.edu/wave\\_sensor\\_pw.html](http://infosportwashington.cee.wisc.edu/wave_sensor_pw.html)

Website Data Display



Breakwater of Milwaukee Marina

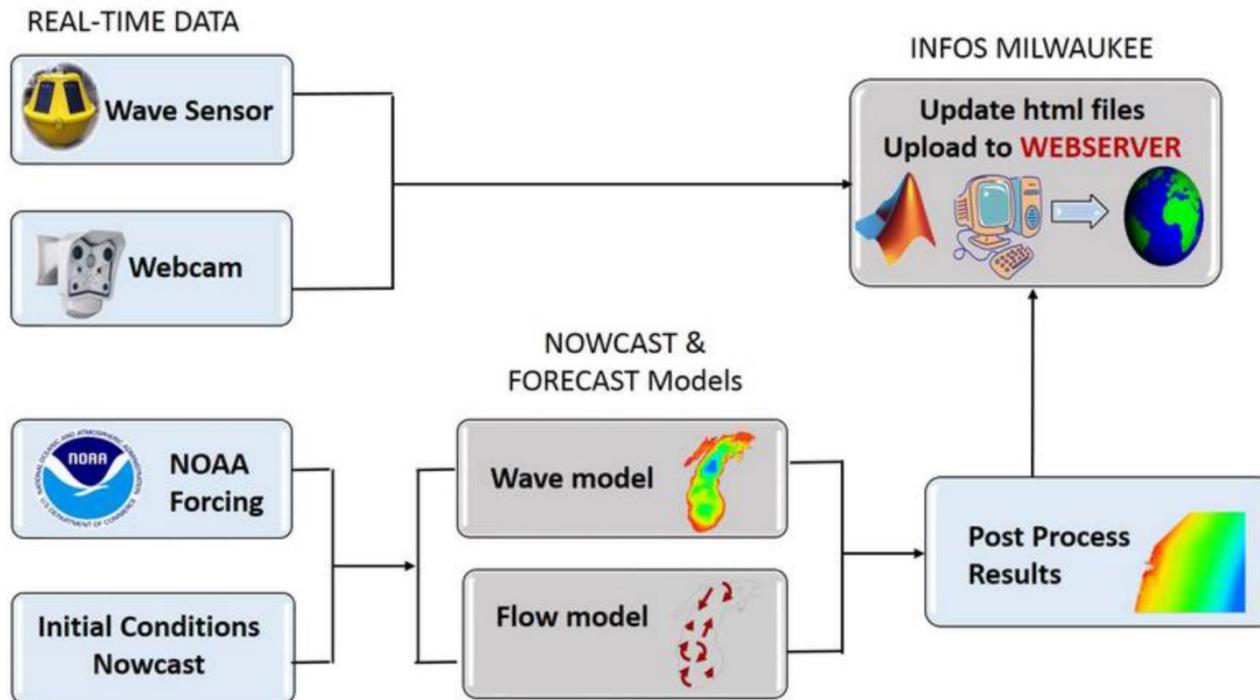


Duluth Harbor South Pier



# Integrated Nowcast (real-time) Observation and Forecast Operation System (INFOS)

Integrated **N**owcast **F**orecast **O**peration **S**ystem  
(**INFOS**)



# Integrated Nowcast (real-time) Observation and Forecast Operation System (INFOS)

- INFOS Port Washington

<http://infosportwashington.cee.wisc.edu/>

- INFOS Port Washington (user friendly version)

[http://infosportwashington.cee.wisc.edu/pw\\_rip\\_watch.html](http://infosportwashington.cee.wisc.edu/pw_rip_watch.html)

# Questions?

