The Science of Compliance

Empowering Boaters with “The Tools”

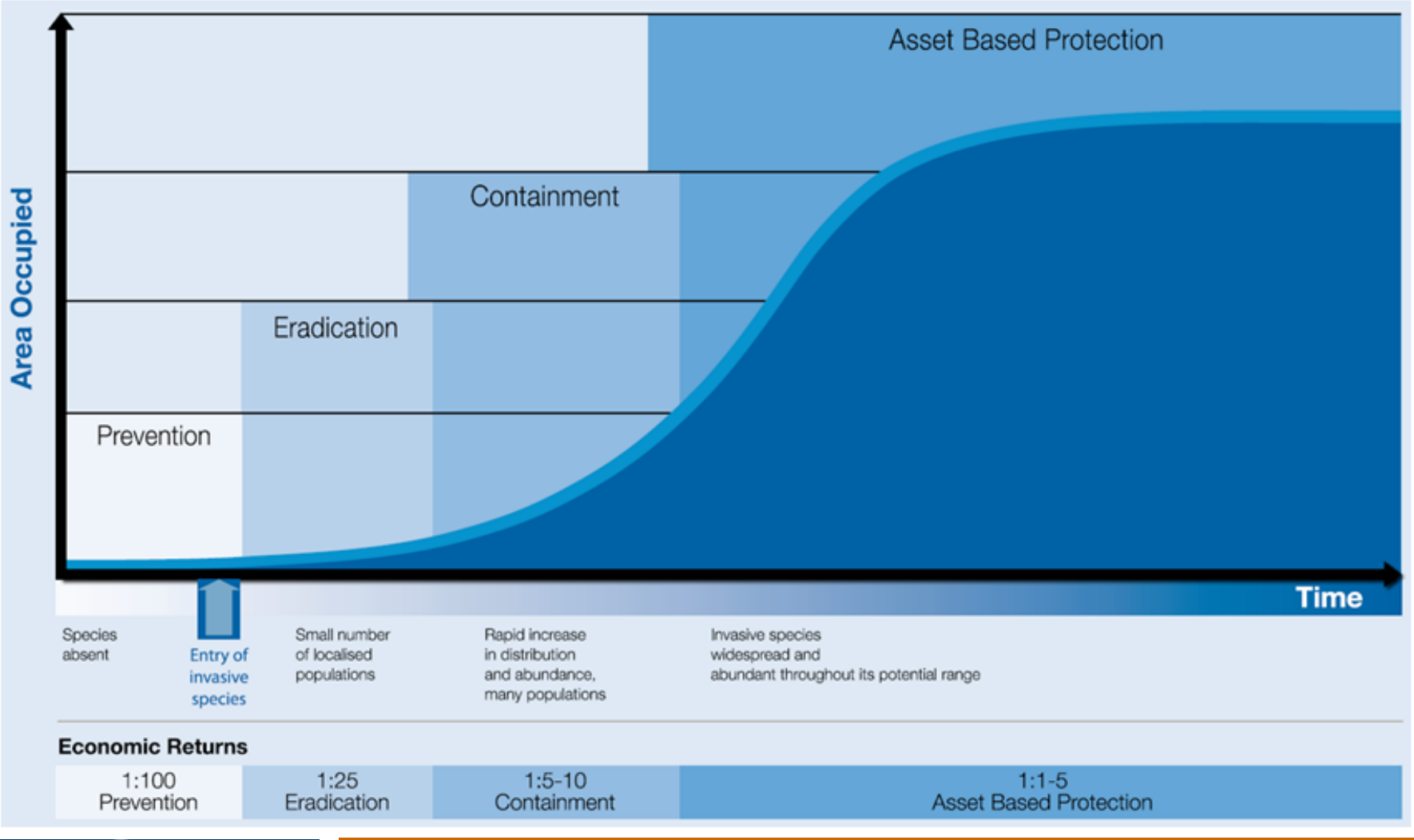
Edgar Rudberg, Ph.D.
NYSFOLA

CD3

May 3, 2019

- The importance of compliance
- Barriers to AIS prevention action
- Pilot sites and example locations
- 3rd party research
- Conclusion

Overview



Invasion Curve

$146B

Invasive species cost to U.S./year

Over 36,000 public boat launches

Existing solutions are costly & cannot scale

Problem

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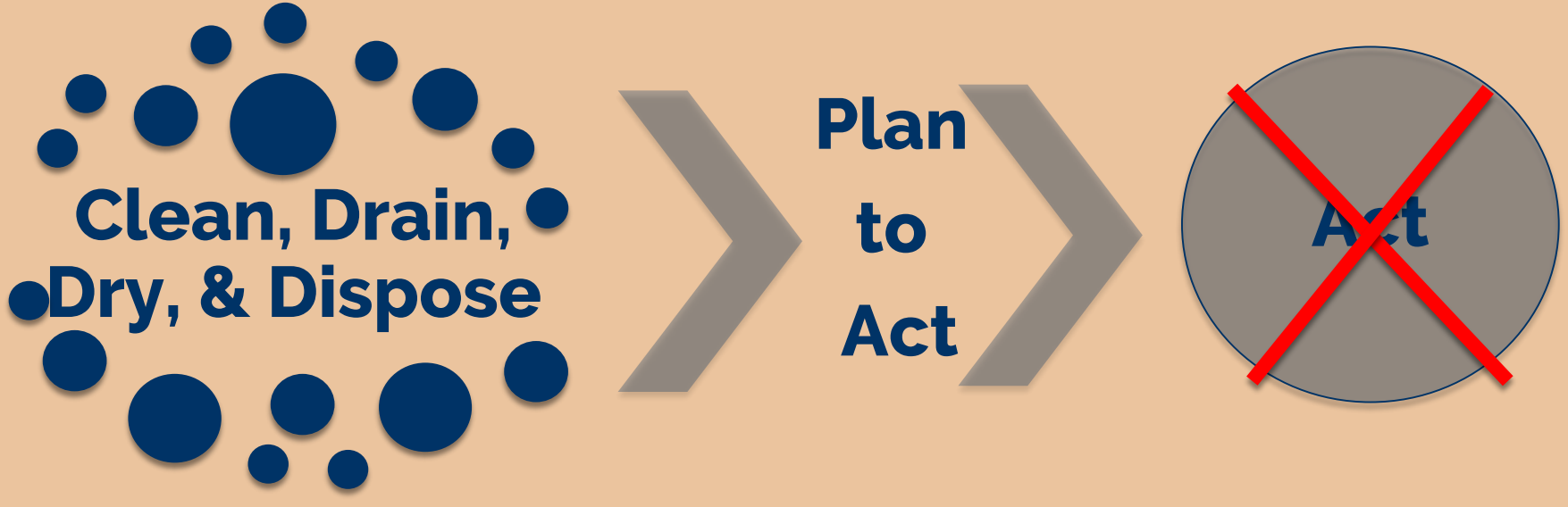
- 2 Species in 2010
- 60% plankton Loss
- 2016 fishery closed

- 1 County
- 1 Fishing season lost
- 1 Lake

Collapse: Mille Lacs



CBSM to BMP's

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Example: my first car… not a Ferrari

- Marketing
- High brand value
- All the cool kids are doing it
- Barriers

Outreach has Limits

Example: CFL Light Bulbs

- Rampant messaging
- Low recycle rates
- Centralized drop off
- All the cool kids are not doing it
- Barriers to action

Failure: Recycle CFL

AIS survey says… **“Give ‘em the TOOLS”**

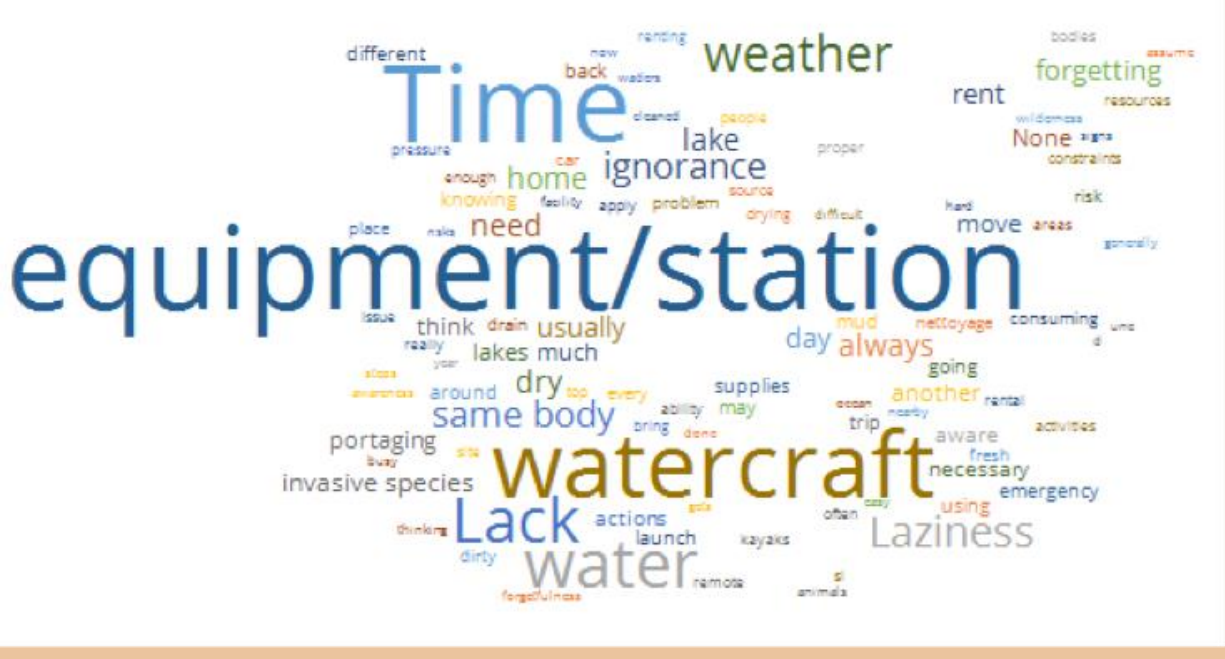

Image Courtesy of Canadian Council on Invasive Species

Goals of 2017 Pilot

- Empower “day boaters”
- 5 locations
- Diversity of boater types
- Small - large launches
- Clean-in vs. clean out
- Urban - rural landscape
- Oligotrophic - eutrophic

Pilot Sites

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Non-Profit Partners

Pilot Sponsors

Public Support

Minnesota Pollution Control Agency

Minnesota DNR

Texas Park & Wildlife

Pilot Partnerships

Design 1.0

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Marine LED lights

Solar Powered

IoT connected

Tethered tools

Compressed air

Wet/dry vac

Pilot Design

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CD3 STATION REMOTE PORTAL

Views Grids Actions

Stations

Status	Name	Location	Air Button	Last Repo	Vacuum B	Light Butt	Off Button	Tool 1 Use	Tool 2 Use	Tool 3 Use	Compress	Tank Leve	AC Voltag
Normal	Station #1	Bryant Lake	74 times	7/17/2017 2:49 PM	62 times	20 times	65 times	208 times	150 times	436 times	47 times	11%	3 volts

Map Navigate Details Provision View All

Reading	Value	Date	History
Tank Level	11%	7/17/2017 2:49 PM	
AC Voltage	3 volts	7/17/2017 2:49 PM	
Air Button Uses	74 times	7/17/2017 2:49 PM	
Vacuum Button Uses	62 times	7/17/2017 2:49 PM	
Light Button Uses	20 times	7/17/2017 2:49 PM	
Off Button Uses	65 times	7/17/2017 2:49 PM	
Tool 1 Use Count	208 times	7/17/2017 2:49 PM	
Tool 2 Use Count	150 times	7/17/2017 2:49 PM	
Tool 3 Use Count	436 times	7/17/2017 2:49 PM	
Compressor Uses	47 times	7/17/2017 2:49 PM	

MyCD3Station.com

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Education

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Bryant Lake

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Pike Lake

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Minnetonka - 1

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Lake Riley

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Minnetonka - 2

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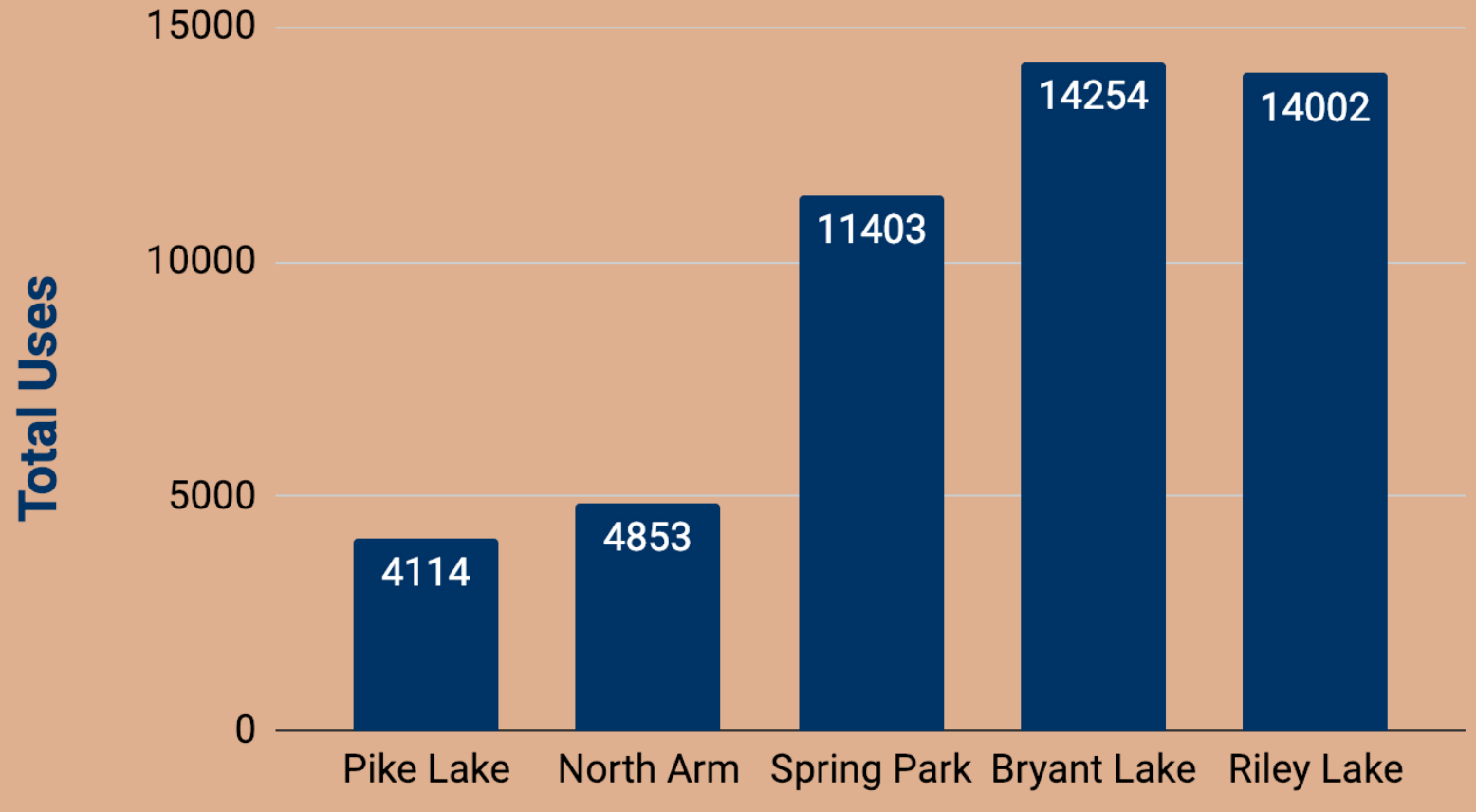
Total Uses for 2017-2018 Pilot



28,487+ Uses

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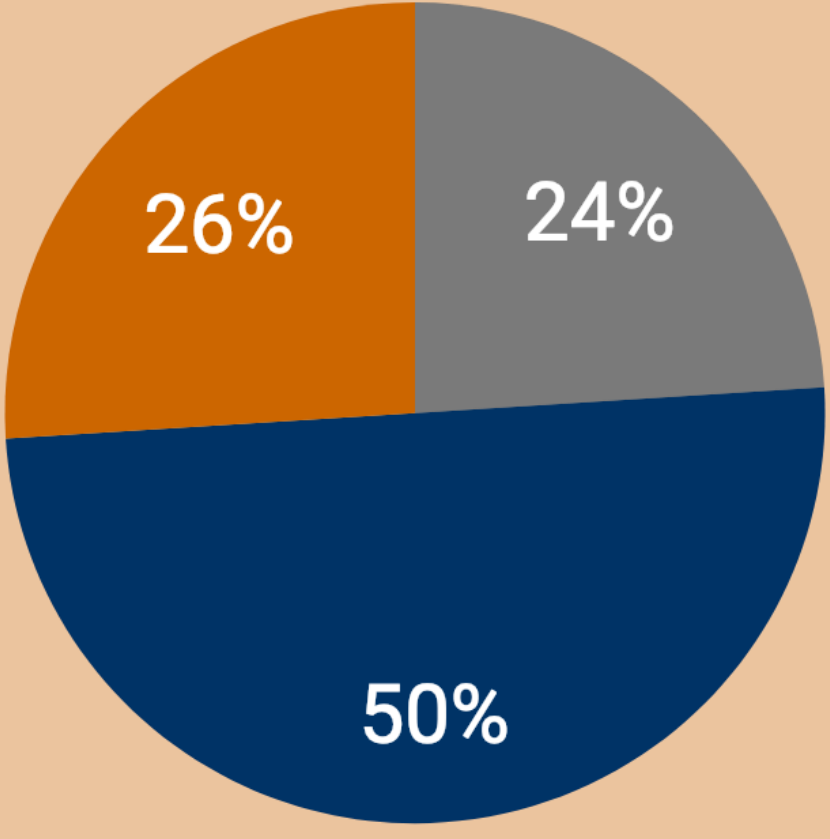
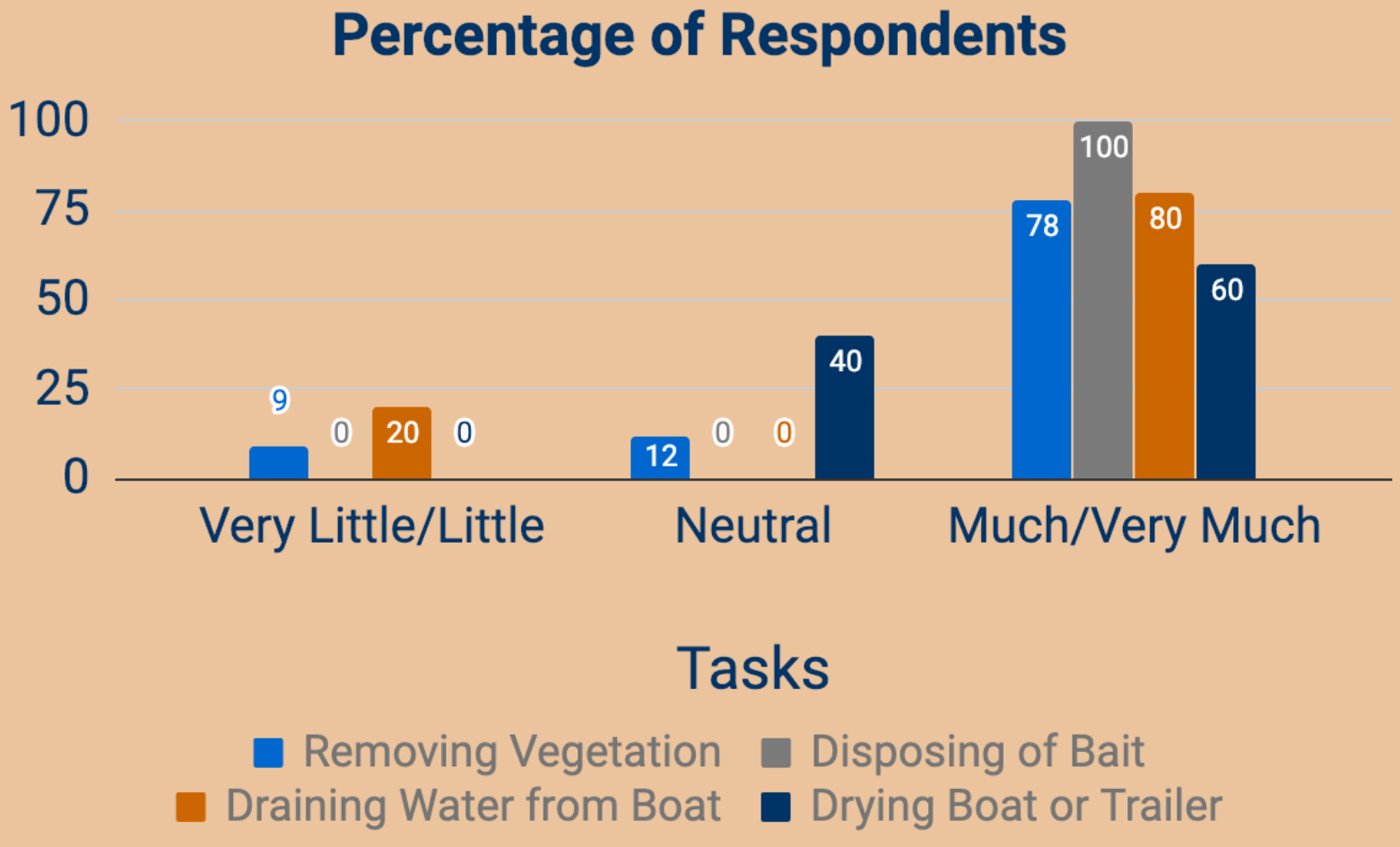


● < 3 Minutes ● 3-5 Minutes ● 5-10 Minutes

*Source: Three Rivers Park District 2019 Survey

Length of Time Used



*Source: Three Rivers Park District 2019 Survey

Helpfulness of CD3 in

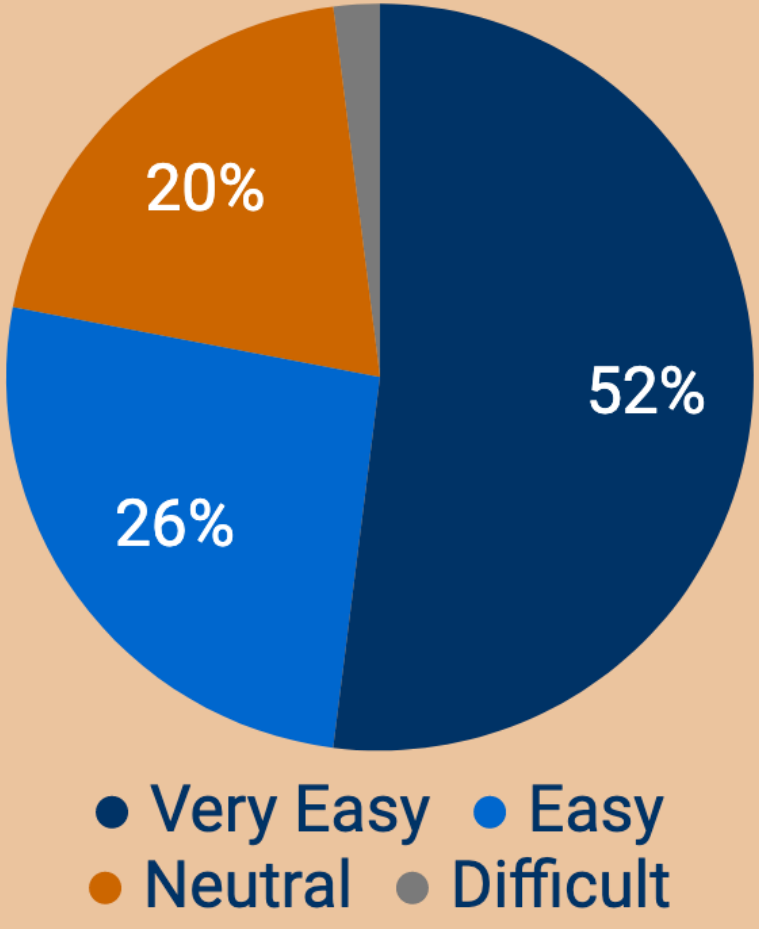
Ease of Use of CD3

What if anything was difficult?

- "Nothing" (plurality)
- "The vacuum sucked up my plug."

What if anything was easy?

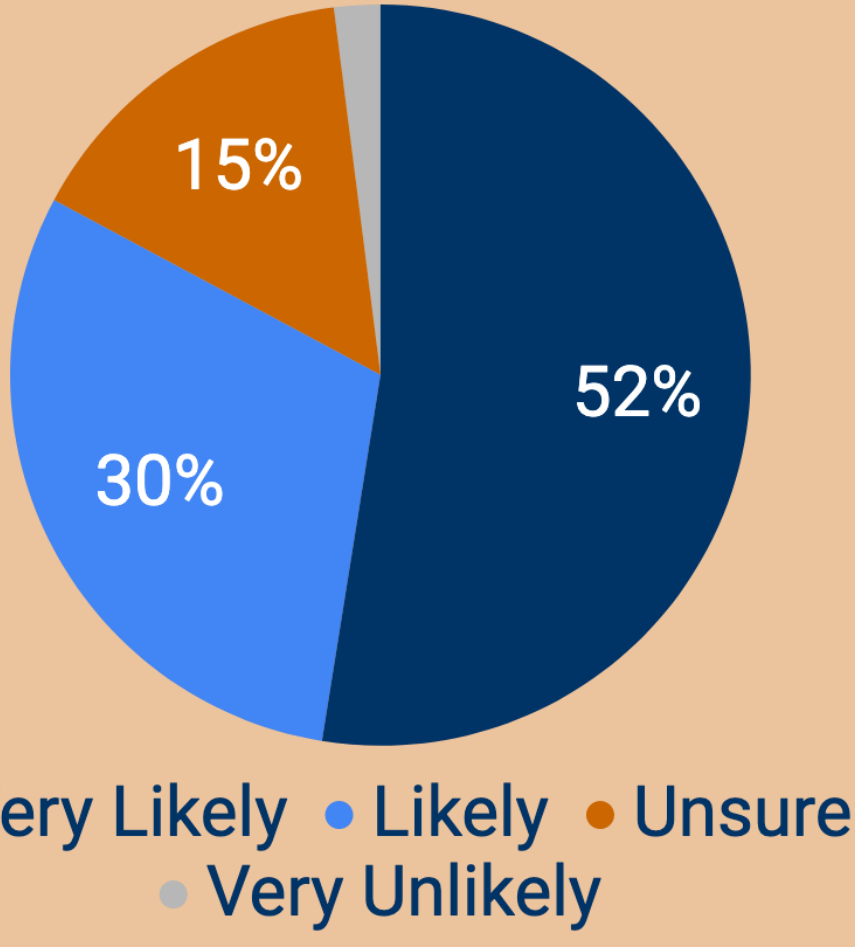
- "I find the entire station easy to use"
- "Everything"



*Source: Three Rivers Park District 2019 Survey

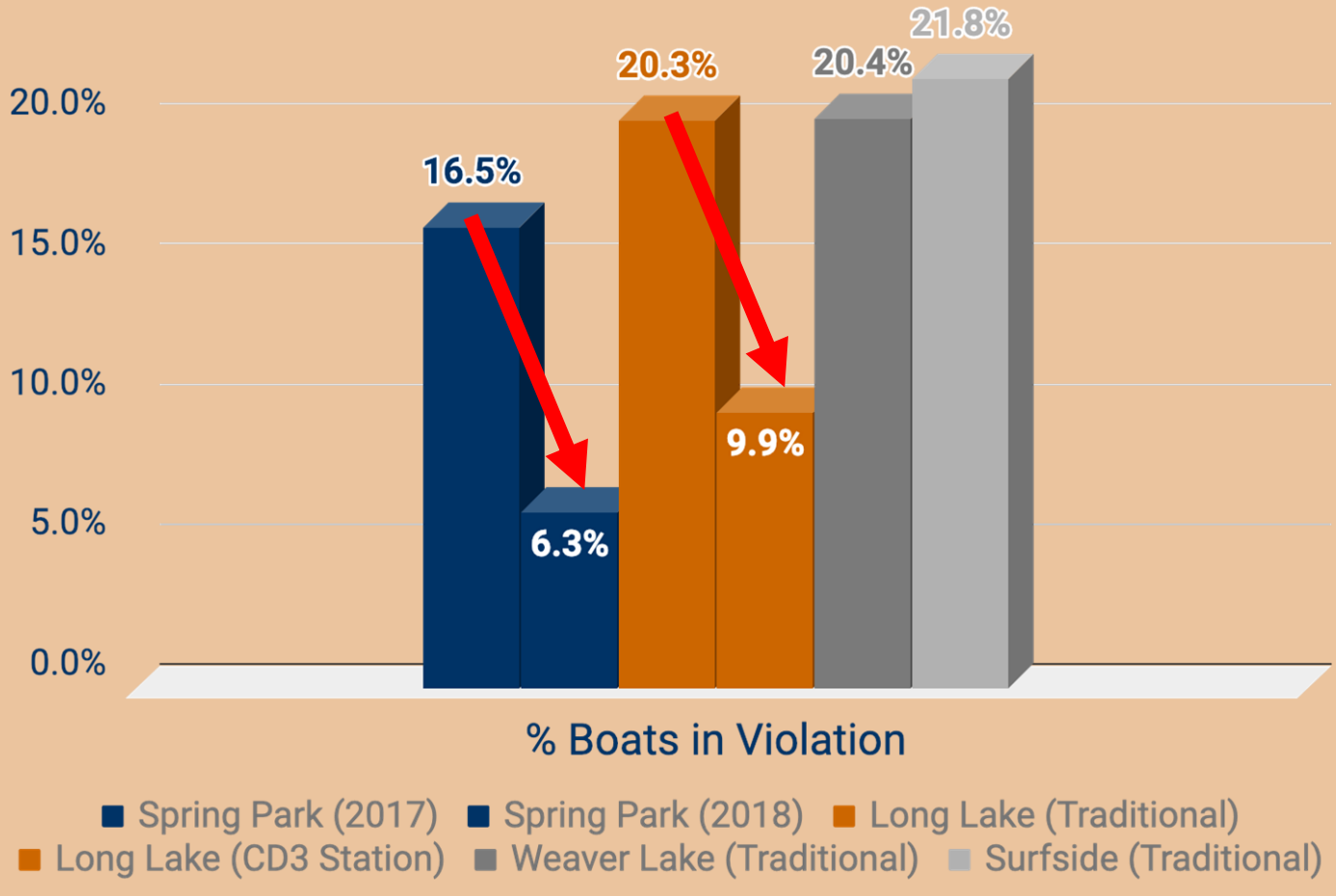
Likely to use:

- "Like to keep boat clean"
- "Easier than using your hands"
- "No reason not to"
- "Don't want to spread AIS"



*Source: Three Rivers Park District 2019 Survey

Future Use?



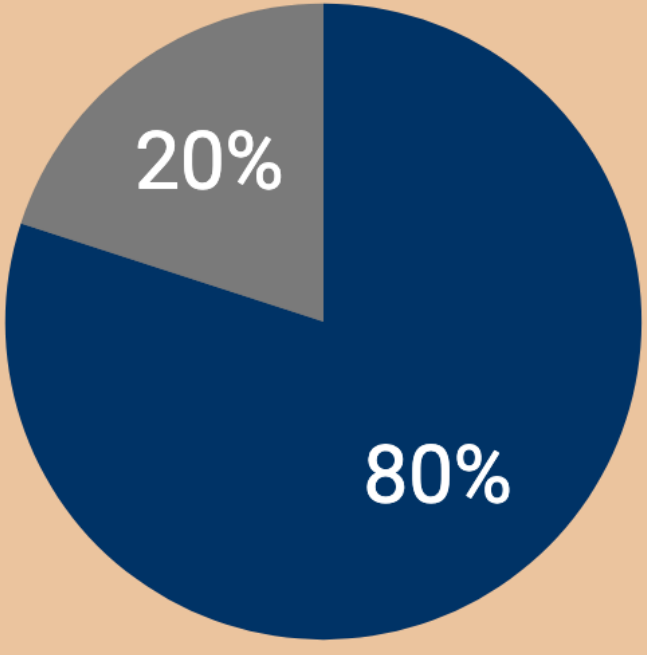
*Source: Hennepin County Survey

Violation Rates

Average Percent Residual H2O Removed from Livewell

● Removed

Average Percent Residual H2O Removed from Bilge



● Removed ● Remaining

Residual H2O Study

- Decrease in violation rates by 70+%
- Automatic metrics and maintenance alerts
- High tool use
- Low O&M
- No vandalism
- High public approval

2019 Key Points

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- 3rd party efficacy research
- Custom programs
  - Digital kiosk, geofencing, check-in/out
- Installations Across North America:
  - South Dakota, Michigan Nebraska, Wisconsin, Iowa, Kansas, Washington, New York, Mississippi, Utah, Mississippi

Future Research

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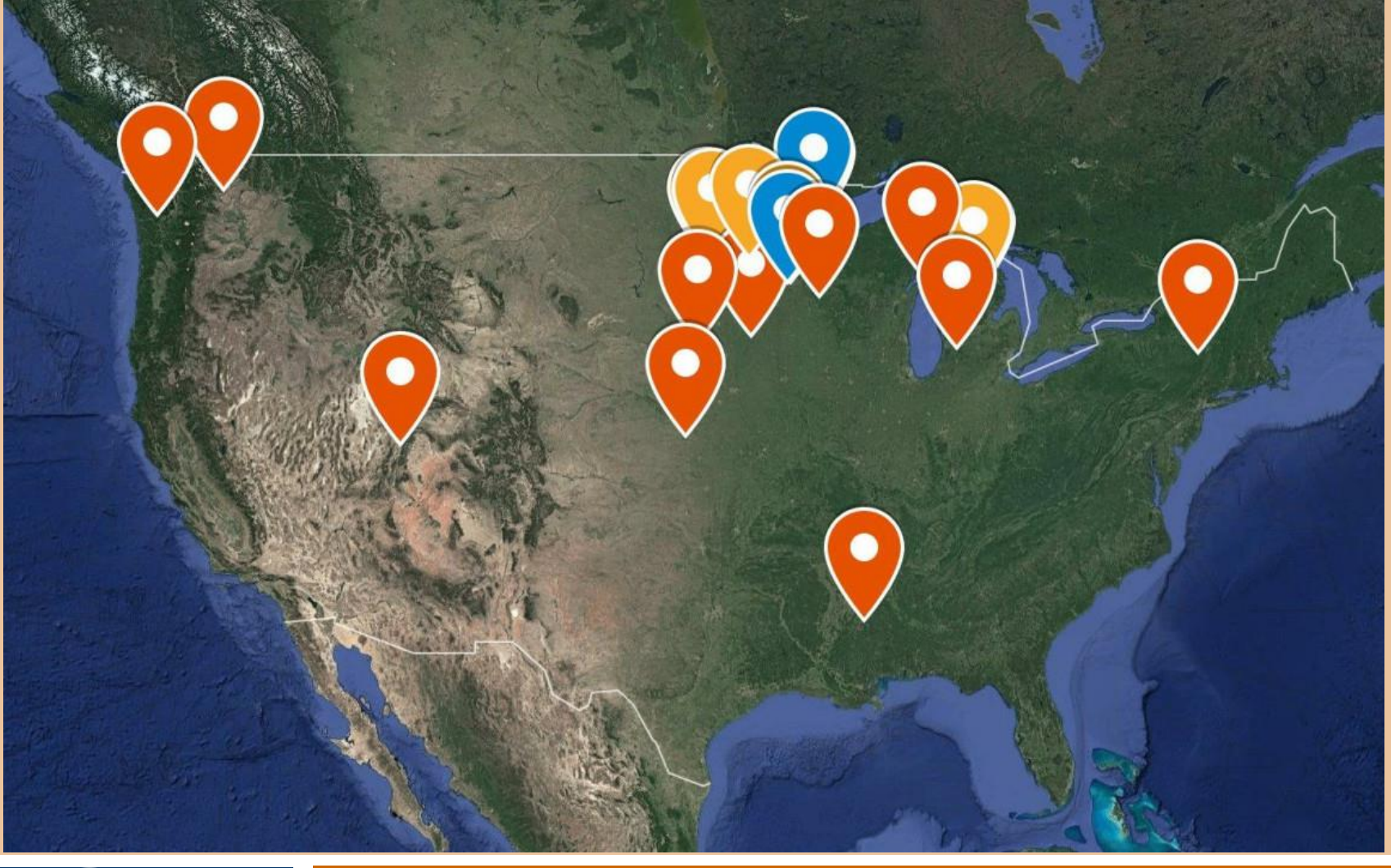

2019 Locations

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Station

Trailer

Model Options

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Outpost

Wayside

Model Options

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Empowering the public to take ACTION

CD3

Summary

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Ed Rudberg, Ph.D., CEO

CD³, General Benefit Corporation

ed@cd3station.com

(952) 212.6576

www.cd3station.com

Questions?

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