HENNEPIN COUNTY
MINNESOTA

Public access re-design observation summary

In 2012, Hennepin County piloted a project to re-design the North Arm public access on Lake Minnetonka using theories from behavior change research to prompt boaters to take proper aquatic invasive species (AIS) prevention actions. Based on the success of this pilot and the development of new technology, the county expanded accesses re-design at Spring Park, Lake Minnetonka and Long Lake public accesses.

The county's current behavior change strategies include: the CD3 waterless cleaning system, which provides the tools to facilitate the actions; pavement markings to influence traffic flow, designated locations to take AIS prevention measures; and signs to prompt the desired behaviors. Using this full complement of behavior change strategies, the county re-designed the access at Spring Park starting in 2016 (completed in 2018) and at Long Lake in 2018.

CD3 waterless cleaning system

In 2017 and 2018, the county hired Fortin Consulting to observe the AIS prevention behaviors boaters took at various public accesses when Minnesota Department of Natural Resources (DNR) inspectors were not present. The Three Rivers Park District (TRPD) also recently provided a report of "Use and Satisfaction of CD3 Watercraft Cleaning Stations" (Nov 2018) summarizing observations and surveys.

Redesigned accesses have better compliance rates

Public access that have been redesigned to emphasize AIS prevention actions have fewer violations than traditional accesses. In 2017, observers at traditional accesses (Long Lake, Weaver Lake and Lake Minnetonka – Surfside access) found AIS violation rates of about 20 percent. After access redesign, the violation rate at Long Lake was cut in half to about 10 percent. At the Spring Park access, violation rates were at 16.5 percent in 2017 and dropped to 6.3 percent in 2018.

Observed violation rates compared by access design

Location	Lk. Mtka – Spring Park		Long Lake		Weaver Lake	Lk. Mtka Surfside
Year	2017	2018	2017	2018	2017	2017
Access design	CD3, stop bars, signs	3-CD3 stations/ outposts	Traditional access	CD3, stop bars, signs	Traditional access	Traditional access
Any violation	**16.5%**	**6.3%**	**20.3%**	**9.9%**	**20.4%**	**21.8%**

**Observation data when access inspectors where not present.*

Redesigned accesses have better self-inspection rates

The percentage of boaters observed inspecting their own watercraft or trailer at the access increased at redesigned accesses. Below are the percentage of boaters that were observed taking a "thorough – bent over to search" or took a "quick look" for vegetation. Self-inspections increased by one-third, up to 63 percent in re-design year-one at Long Lake and 92 percent for re-design year-two at Spring Park.

Observed self-inspection rates compared by access design

Location	Lk. Mtka – Spring Park		Long Lake		Weaver Lake	Lk. Mtka Surfside
Year	2017	2018	2017	2018	2017	2017
Access design	CD3, stop bars, signs	3- CD3 stations/ outposts	Traditional access	CD3, stop bars, signs	Traditional access	Traditional access
Self-inspection of watercraft	**66%**	**92%**	**48%**	**63%**	**57%**	**64%**

**Observation data when access inspectors where not present.*

Re-designed accesses are successful at creating social norms and prompting action

The changes to the traffic flow using stop bar markings and simple instruction signs serve as prompts to remind people to take the appropriate action and can help overcome the issue of boaters operating on auto-pilot as they complete the tasks to launch their watercraft. At the Spring Park access in 2018, observers found that 87 percent of boaters followed the traffic markings and stop bars when entering and exiting.

Once boaters start using the designated space and CD3 station, it served to create a social norm. This is an important behavior change tool setting expectations. People are more likely to take an action if they see their peers modeling that action. This social norming aspect was observed by the TRPD report that noted departing watercraft were significantly more likely to use a CD3 station when they had to wait to use the system (57 percent) compared to when nobody ahead of them was using the CD3 station (19 percent).

CD3 outpost and prompt signs

It is also interesting to note that the full benefits of the redesigned access may take a few years to be realized. Compliance and self-inspection rates have improved at Spring Park between 2017 and 2018. Note that two additional CD3 outposts were added in 2018. The county will continue to gather observation data in 2019 to better understand the changes in behavior over time.

Observed rates of boaters following traffic markings compared by access design

Location	Lk. Mtka – Spring Park		Long Lake		Weaver Lake	Lk. Mtka Surfside
Year	2017	2018	2017	2018	2017	2017
Access design	CD3, stop bars, signs	3- CD3 stations/ outposts	Traditional access	CD3, stop bars, signs	Traditional access	Traditional access
Followed traffic Markings	**67.2% in 83.3% out**	**87.5% in 87.5% out**	**43.8% in 51.6% out**	**41.1% in 68.8% out**	**46.4% in 61.9% out**	**70.7% in 66.7% out**

**Observation data when access inspectors where not present.*

Boaters behave differently when DNR inspectors are present

Another interesting finding related to social norming was that CD3 station use decreased significantly at Spring Park when a DNR inspector was present. In 2018, TRPD staff observed that only 3 percent of boaters used the CD3 station at Spring Park when a DNR inspector was present, compared to 9 - 19 percent when an inspector wasn't present. In two other CD3 locations in Hennepin County (Bryant and Riley), the use rates were higher and stayed the same with or without the presence of a TRPD access inspector. TRPD reports that staff at Bryant and Riley lakes periodically educated and encouraged boating visitors about the CD3 stations. Inspectors could take a proactive role in educating and encouraging boaters to use the CD3 stations.

Data on tool use and timing can be used to improve AIS prevention programs

There are significant differences in county accesses and watercraft that boaters launch. This appears to create differences in which CD3 tools are used. As new tools are invented, accurate data can be gathered to target the tools for each specific access condition and user preferences. For example, a longer grabber tool and the current grabber tool could be installed at a Lake Minnetonka CD3 station. The CD3 tool monitoring data would help to determine which grabber tool is preferred, assuming that the larger boats may prefer the longer tool. Another example, at Long Lake in 2018, the percentage use of the vacuum plus air blower was greater than 50 percent of all tool use. At Spring Park, the vacuum and air blower accounts for less than 18 percent and the grabber tool alone accounts for about half of all tool uses. This may be attributed by Spring Park observation description of "weedy" 88 percent of the time and Long Lake only 14 percent.

Illustration from CD3 station instructions
Image courtesy of CD3

Boating traffic at public accesses is not steady. Spring Park high use period appears to be from 3 pm to 7 pm. Public access use varies per season, lake, and time of day. The CD3 tool monitoring data can be another tool to improve inspection programs by matching inspections times to high use times.

Traditional access signage has limited affect

As with most accesses, there is traditional signage located at a designated location. This signage includes numerous topics such as rules of the road, fishing restrictions, AIS laws, etc. Despite whether an access had been redesigned or not, the percentage of boaters that were observed to either "Read signage" or "Glanced at signage" was low. In two years of observations, 4.7 percent were observed to either "Read signage" or "Glanced at signage."

Redesigning accesses can be cost effective way to prevent the spread of AIS

Having inspectors at all accesses, all the time, is not financially sustainable. In Hennepin County, having inspectors at all boat/trailer accesses from 6 am to 9 pm throughout the boating season would cost more than $2 million. Staff recommends expanding efforts to redesign accesses towards AIS prevention actions and randomizing the times and locations of inspection programs. Optimizing use times and creating uncertainty as to when inspectors will be present may be more effective. As the basic clean-drain-dry-dispose AIS prevention actions continue to become more normalized behaviors, AIS prevention budgets may be effective by shifting towards regional courtesy decontamination station availability, education for when decontamination is necessary, and/or more enforcement actions targeting the last percentages of violations.

Comparison of costs for access re-design compared to access inspectors

	CD3	Signage	Stop bars	1 yr	5 yr
Access re-design (*typical access*)	$30,000	$3,000	$1,200	$13.41/hr	$2.74/hr
Level 1 access inspector				**$15/hr**	**$15/hr**

Contact information

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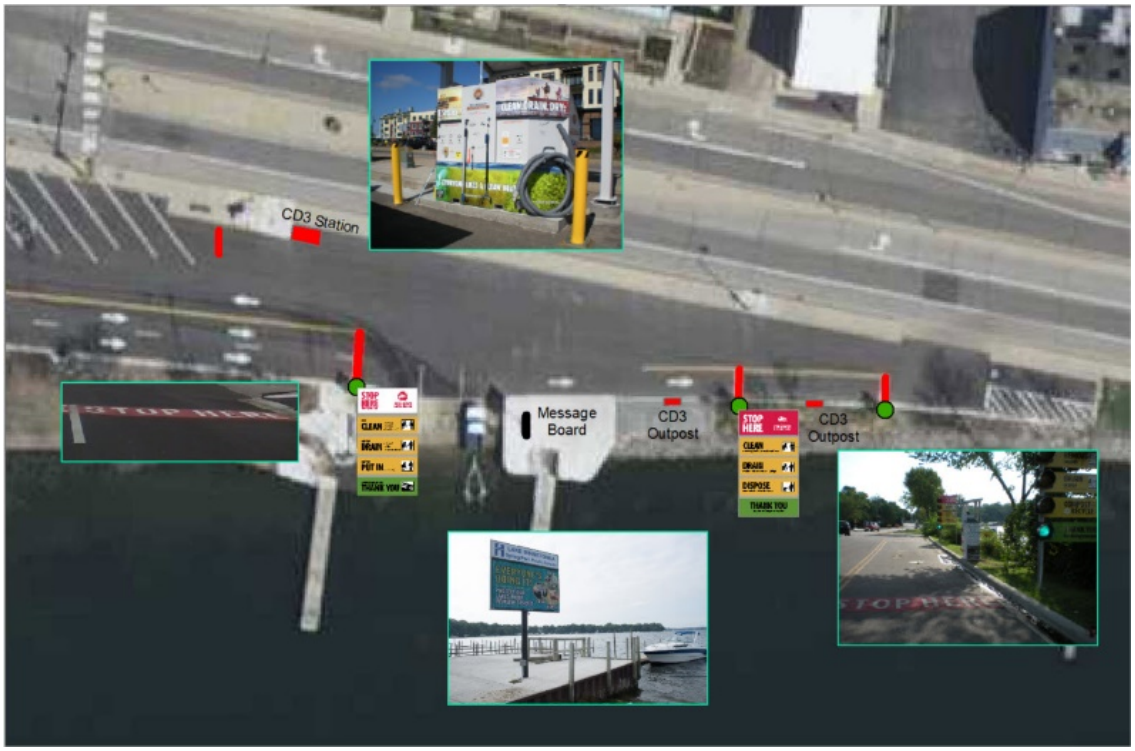
Aerial photos depicting layout of AIS prevention tools

Spring Park – Lake Minnetonka (2016-2018)



Long Lake (2018)