community sailing center
lake champlain : burlington vermont

LAKE ACCESS. FOR ALL.

A campaign to welcome everyone to the waterfront.

Celebrating our past, planning for our future

The Community Sailing Center has served the Lake Champlain community since 1994 with a mission to encourage and celebrate the responsible use and long-term stewardship of the lake. What started as a summer camp with 17 kids has grown to serve more than **8,100 people in 2019.**

In 2018, the CSC said goodbye to its rented warehouse headquarters to celebrate its 25th year in a brand-new home – The Pomerleau Community Waterfront Campus and Raymond P. Sullivan Education Center. This 22,000-square-foot lakeside hub includes classroom space for year-round learning, indoor boat storage, locker and restrooms, a maintenance shop, and staff offices.

From this permanent home, the meaning behind **Lake Access. Life Lessons. For All.** has grown to include more lessons, for more people, shared with that same passion and skill that has carried the CSC since day one.

Ensuring accessibility and our sustainability

The Lake Champlain Community Sailing Center is the *only* non-profit facility of its kind on Lake Champlain, serving the sailing education and recreational access needs of more than 8,000 visitors on an annual basis – regardless of age, gender, race, physical ability, or means to pay. Lake access. For all.

We are embarking on a capital campaign to build permanent waterfront infrastructure that supports universal access to Lake Champlain. With these smart additions and improvements, the center will be able to serve even more members of our community for decades to come.

This $3.3M goal will fund the $2M **waterfront infrastructure** *and* create a **debt-free future** for the organization, allowing us to focus future resources on self-sufficiency and community programming.

SAFE HARBOR
$700,000

DEEP WATER BASIN
$300,000

THE DANA PIER
$200,000

UNIVERSALLY ACCESSIBLE RAMP
$100,000

GANGWAY
$85,000

LAUNCH
$50,000

HOIST
$30,000

DOCK
$35,000

PROJECT PLANNING
$300,000

CONTINGENCY & CAMPAIGN ADMINISTRATION
$200,000

INFRASTRUCTURE SUBTOTAL
$2,000,000

DEBT-FREE FUTURE
$1,300,000

Paying off the balance of the facility mortgage would mean all future income would directly support community programming, allowing us to provide more diverse and inclusive camps, events, workshops, and more.

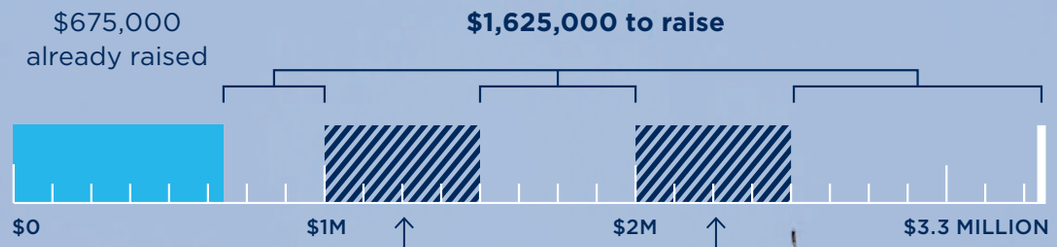
Lake Access. For All.

Connecting land to water, learning to lake, and you to our community.

10 project components comprise a **safe harbor** area providing experiential learning space, multi-craft launch facilities, a deep-water basin for keel boats, and universal accessibility to the water directly in front of the building.

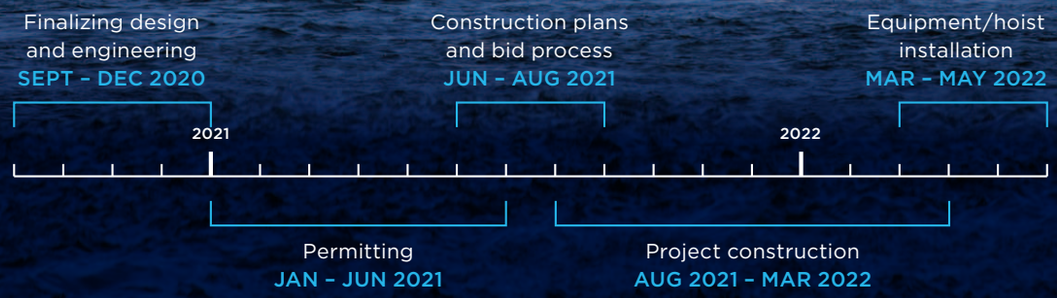
Through careful planning the **original dock, gangway, and attenuator elements are re-purposed, re-furbished, expanded, and incorporated** into a permanent safe harbor.

CAMPAIGN PROGRESS



The CSC has received a generous challenge gift from the **Charles A. and Marna Davis Foundation.** For every $1M we raise, the The Foundation will donate $500,000 for a **total matching gift of $1M.**

PROJECT TIMELINE



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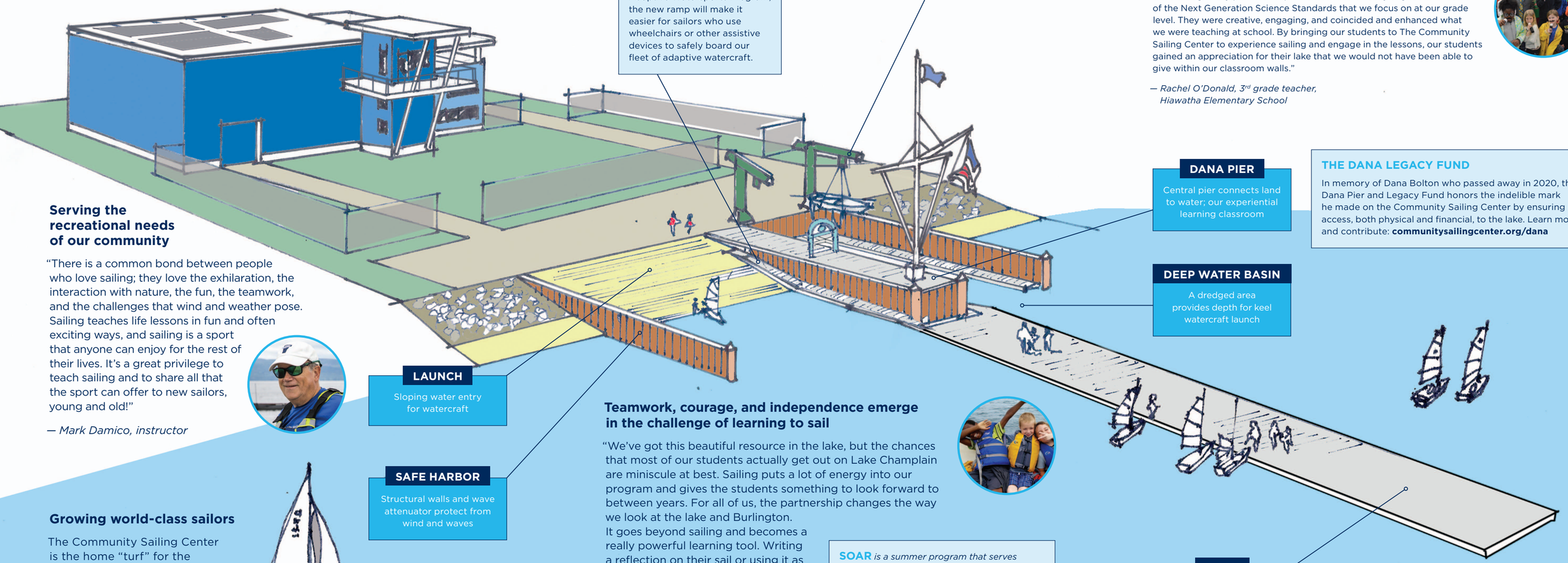
UNIVERSALLY ACCESSIBLE RAMP
Dock and water access for people with disabilities

A crucial feature of our thriving Adaptive Watersports Program, the new ramp will make it easier for sailors who use wheelchairs or other assistive devices to safely board our fleet of adaptive watercraft.

HOIST
Remote-operable lift allows safe launch for high-mast boats



Experiential learning in math, science, and lake ecology

"The Floating Classrooms program supported our curriculum by providing an authentic opportunity to engage in science and to have hands-on opportunities for our students to learn about Lake Champlain. The lessons were thoughtfully planned, implemented, and directly aligned with some of the Next Generation Science Standards that we focus on at our grade level. They were creative, engaging, and coincided and enhanced what we were teaching at school. By bringing our students to The Community Sailing Center to experience sailing and engage in the lessons, our students gained an appreciation for their lake that we would not have been able to give within our classroom walls."

— Rachel O'Donald, 3rd grade teacher, Hiawatha Elementary School

DANA PIER
Central pier connects land to water; our experiential learning classroom

THE DANA LEGACY FUND
In memory of Dana Bolton who passed away in 2020, the Dana Pier and Legacy Fund honors the indelible mark he made on the Community Sailing Center by ensuring access, both physical and financial, to the lake. Learn more and contribute: **communitysailingcenter.org/dana**

DEEP WATER BASIN
A dredged area provides depth for keel watercraft launch

Serving the recreational needs of our community

"There is a common bond between people who love sailing; they love the exhilaration, the interaction with nature, the fun, the teamwork, and the challenges that wind and weather pose. Sailing teaches life lessons in fun and often exciting ways, and sailing is a sport that anyone can enjoy for the rest of their lives. It's a great privilege to teach sailing and to share all that the sport can offer to new sailors, young and old!"

— Mark Damico, instructor

LAUNCH
Sloping water entry for watercraft

SAFE HARBOR
Structural walls and wave attenuator protect from wind and waves

Growing world-class sailors

The Community Sailing Center is the home "turf" for the University of Vermont and the Northern Vermont High School sailing teams, whose sailors launch practices, races, and regattas from our docks.

Teamwork, courage, and independence emerge in the challenge of learning to sail

"We've got this beautiful resource in the lake, but the chances that most of our students actually get out on Lake Champlain are miniscule at best. Sailing puts a lot of energy into our program and gives the students something to look forward to between years. For all of us, the partnership changes the way we look at the lake and Burlington.
It goes beyond sailing and becomes a really powerful learning tool. Writing a reflection on their sail or using it as part of a research paper really helps students retain the information."

— Jim Drown, Summer School Program Director

SOAR *is a summer program that serves children who are performing below grade level in reading and math to prevent "summer learning loss." Students sail with the CSC twice between third and fifth grade; 95% are children who receive free or reduced-cost lunch.*

DOCK
Refurbishing our existing Atlas dock will bring new life to existing equipment

fff
freeman | french | freeman

Help us welcome everyone to the lake.

Lake Access for All will assure that everyone in our extended community can share in, play on, and take care of the greatest asset we all own, Lake Champlain, by constructing a safe harbor and permanent dock amenities directly adjacent to the Pomerleau Community Waterfront Campus.

Your gift connects land to lake, making the safe water entry and landing on reliable docks possible for thousands of people for decades to come.

WE NEED **YOUR** HELP. MAKE A GIFT TODAY.

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communitysailingcenter.org/lakeaccess

Memorandum

To: Michael Quaid
Project Manager
Lake Champlain Community Sailing Center

Date: January 21, 2022

Project #: 81162.22

From: Kurt Muller, PE
Zack Clark

Re: Sediment Pre-characterization Assessment Methods and Cost Analysis for LCCSC Waterside Improvements Project

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VHB understands that the Lake Champlain Community Sailing Center ("LCCSC") is proposing to construct waterfront improvements, including watercraft launching infrastructure, wave attenuators, ramp access for a floating dock, a central pier, and a deep-water basin for keelboats ("the Project"), at the existing LCCSC facility waterfront (the "Project area"). The installation of these proposed features will require dredging/excavation of fill material and/or sediment in Burlington Bay.

The majority of sediment/soil disturbance will be associated with the construction of the approximately 30-foot-wide keelboat basin, where excavation to elevation 88.0 feet above mean sea level ("asml") will be required. Approximately 350 cubic yards of sediment are proposed to be excavated. Based on survey of the Project area by Civil Engineering Associates, Inc ("CEA"; CEA 2019), and VHB's understanding that the keelboat basin will be located directly adjacent to the existing sheet metal retaining wall, the majority of excavation will occur within approximately 35 feet of the sheet metal retaining wall, however, limited depth excavation may be required out to approximately 80 feet from shore to maintain elevation 88.0 asml in the keelboat basin approach. Lake bottom substrate within approximately 35 feet of shore is surveyed as either existing small stones or existing large rip-rap. Depth of excavation required to reach 88 asml ranges from 9-feet near shore to approximately 2-feet at a distance of 35 feet from shore. Beyond 35 feet from shore, the lakebed slope and required depth of excavation decreases substantially.

VHB further understands that the LCCSC is seeking to proactively pre-characterize material proposed to be excavated in the Project Area. Contaminants resulting from historical industrial activity in Burlington Bay are known to have impacted sediment to varying degrees depending on location. It is VHBs understanding that results of the proposed pre-characterization assessment will be used to inform Project design, understand project liabilities, and estimate potential material disposal costs. The following memorandum describes several of VHB's proposed approaches and associated preliminary costs for various methods of collecting lake bottom substrate samples. VHB assumes that sample analysis will include federally regulated contaminants (polychlorinated biphenyls, "PCBs"), and analytes with potential to trigger hazardous material management at elevated concentrations (Resource Conservation and Recovery Act list of 8 metals, "RCRA 8 Metals"), as well as contaminants typically found in historically industrial settings (semi-volatile organic compounds, "SVOCs"). VHB has also assumed that roughly 15% of samples may also be analyzed for volatile organic compounds ("VOCs") if elevated headspace screening levels with a photo-ionization detector, and/or visual or olfactory evidence of contamination are observed. Additional sample material would also be collected and

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placed on hold at the laboratory, to be run for a full suite of waste characterization analysis required for landfill disposal acceptance, pending results of the initial analytes described above. The cost for this additional analysis is not included in cost estimates provided below, but is estimated to cost $4,500-$6,000 for the assumed volume of material that may require disposal. A final list of analytes selected for this pre-characterization assessment will be developed based on discussion with relevant regulatory agencies and funding sources.

VHB has identified three possible approaches for physically collecting the proposed lake bottom substrate samples, including;

> Option 1: Borings via hand tools (hammer driven hand core or Eckman dredge) from VHB owned and operated 21-foot center console work boat.
>
> Option 2: Borings via a barge mounted drill rig (utilizing either direct push or sonic drilling technology).
>
> Option 3: Borings from shore via angled borings (utilizing sonic drill rig), with the option to supplement additional samples from the VHB work boat ("Option 3B").

Each of these proposed methods, as well as their benefits, limitations, and approximate costs are described below.

Proposed Potential Sample Collection Methods

Option 1: Sample collection via hand tooling from VHB work boat

Approximate cost: $14K – $16K

Samples will be collected via hand tools (hammer driven core or Eckman dredge) from VHB's work boat. Samples will be collected in a grid pattern with three transects, consisting of three locations each, extending outward from the existing sheet metal wall. Due to the surveyed extent of existing small stones and/or existing large riprap in the Project area, it is unlikely that sediment cores driven with hand tooling will achieve depths greater than 1-2 feet below lakebed surface, and this method may result in limited sample material being recovered. Analytical results of these samples will therefore not be representative of all excavated material but will provide a preliminary scan of shallow lake bottom substrate conditions.

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Option 2: Sample collection via barge mounted drill rig

(Direct-push Drill rig) Approximate Cost: $50K - $55K

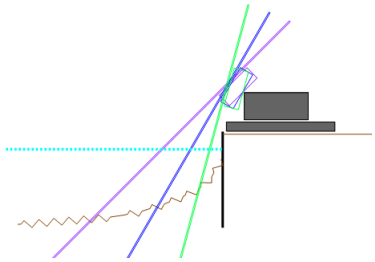
(Sonic Drill rig) Approximate Cost: $55K - $60K

Borings will be advanced via barge mounted drill rig utilizing either direct push or sonic tooling. Sediment samples will be collected in a grid pattern with three transects, consisting of three locations each, extending outward from the existing steel sheet pile retaining wall. Samples will be collected from discrete depth intervals to be representative of the overall depth of proposed excavation at each location. Direct push tooling may frequently encounter refusal in the known lake bottom substrate in the Project area, and therefore require frequent off-sets and result in potentially limited sample recovery. Sonic tooling is much more powerful and has the capability to collect continuous samples to the depth of boring advancement, including incidental rock or riprap cores, however the equipment is more expensive to operate. Mobilization of specialized drilling equipment for marine work is inherently expensive and pricing is subject to an economy of scale. The proposed scope of this assessment likely requires only one day of work. Depending on drilling methodology proposed by potential geotechnical investigations, there may be opportunities to couple this work and achieve cost savings.

Option 3A: Sample collection via angle borings from land

Approximate Cost: $30K – 35K

Angled borings will be advanced via sonic drill rig situated on-shore. With some limitations, sonic drill rigs are able to advance borings at angles up to 45 degrees. The rig will be positioned directly adjacent to the existing steel sheet pile retaining wall, and increasing angles (15º, 30º, 45º) will be utilized to reach sample locations farther from shore. Nine borings will be advanced in a grid pattern from three locations on shore. Based on drill rig height, ground elevation, and slope of the lake bottom, the maximum anticipated horizontal distance to lake bottom substrate surface reachable from shore is estimated to be 15-20 feet. However, the boring will continue at an advanced angle (~45º) and therefore reach elevation 88 amsl at approximately 20-25 feet from shore. Samples collected via angled borings should be representative of material excavated within 25 feet of shore, which is anticipated to be the portion from which the majority of excavation will occur. Due to the need to hang the sonic drill stem over the existing steel sheet pile retaining wall, drill rig operation/tooling changes will be supported by small floating docks secured to the retaining wall. For this to work most efficiently and safely, the lake water level will need to be greater than approximately elevation 97 amsl, which typically only occurs in the spring and early summer.



Sonic Drill Rig Angle Boring Diagram

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Option 3B: Sample collection via angle borings from land, with supplemental samples collected from VHB work boat

Approximate Cost: $36K – $38K

This option will utilize the same methods as Option 3A, however, supplemental samples will also be collected via hand tools from the VHB work boat at distances greater than ~30-feet from shore. These activities will happen concurrently to utilize VHB staff and resources as efficiently as possible. Lake bottom substrate at distances greater than ~30 feet from shore is likely comprised of finer grained materials that are more conducive to hand tool sampling methods. Additionally, depth of proposed excavation at distances greater than 35 feet from shore are less than two feet, and therefore attainable via hand tooling.

<u>VHB reporting and deliverables:</u>

Prior to implementation of the proposed pre-characterization assessment, VHB will prepare a Quality Assurance Project Plan ("QAPP") to specify sampling methods, locations, depth intervals, selected analysis, and decontamination procedures. The QAPP will also meet the requirements of the Department of Environmental Conservation Investigation and Remediation of Contaminated Properties Rule ("IRule"). Results of the assessment will be reported in an IRule compliant Site Investigation Report. Costs for VHB to complete these documents are included with the cost estimates provided for each sampling method option described above.

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