

water

Ocean Observing Prize – BUILD Contest
NSWCCD Brief to Teams
DOE, NREL, PNNL, and Navy Prize Team
Oct 13, 2021

Updated May 2, 2022

Testing Points of Contact

- Direct ALL emails to OceanObserving@NREL.gov. You may Cc other POCs as necessary.
- Miguel Quintero, Carderock, Testing Lead
 - miguel.quintero1@navy.mil
- Erin Walters, PNNL, Dummy Payload and Test Coordinator
 - erin.walters@pnnl.gov
- Rick Driscoll, DOE WPTO, Testing Facilitator
 - frederick.driscoll@nrel.gov
- Carrie Schmaus, DOE WPTO, Prize Lead
 - carrie.schmaus@ee.doe.gov

Access to Carderock

- The front gate is open for visitors 6:30am – 6:00pm during the work week
- Teams will have access to the Carderock test site during their assigned test days from 7:00am to 5:30pm
- 1 team vehicle may be driven on-site. Teams will follow a Carderock employee's vehicle to Building 18 after checking in.
- Teams with more than 1 vehicle will be required to park their other vehicle(s) in designated off-site parking at Carderock Park prior to meeting at the visitor center
- Teams may not begin working on their vehicle until 8:00am each day
- All teams **MUST** be off base by 5:30pm everyday

Access to Carderock

- On Day 1, please arrive at Carderock Visitor Center before 7:00am to retrieve visitor badge
 - Submit forms via team Box folder by May 6
 - Bring a copy of your completed base access form
- Identification must be presented each morning (US citizens use Driver's License or Passport; Foreign Nationals use a Passport or Green Card)
- Teams may change on-site members throughout the four days of testing, but due to facility occupancy restrictions, only three team members will be allowed on site at the same time
- Foreign Nationals may be required to ride in the Carderock employee's vehicle

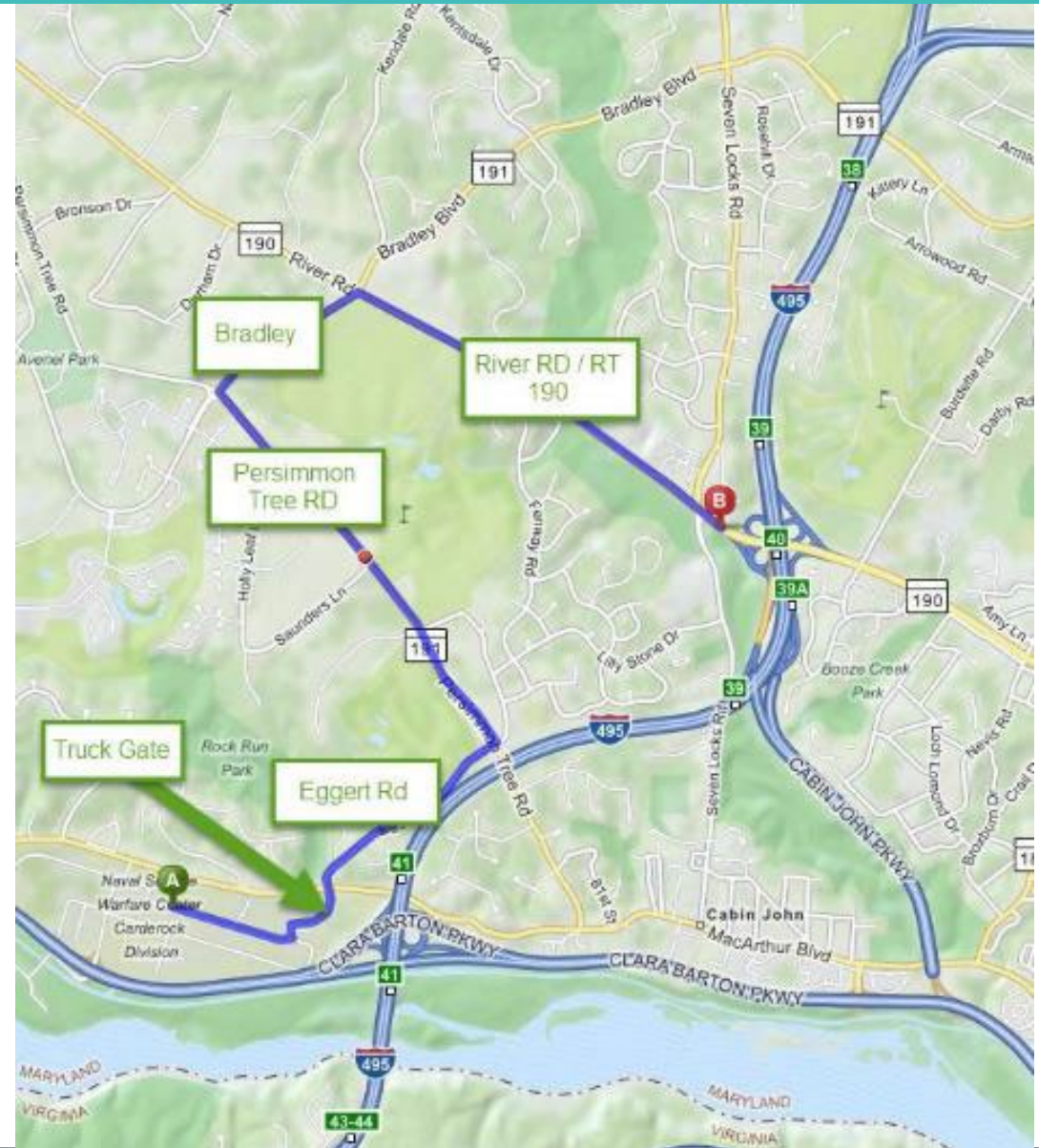
Access to Carderock

- Personnel
 - Use front gate for access in mornings and evenings
 - For front gate address map search use: “NSWC, Carderock Division, Carderock, Bethesda, MD 20817”
- Parking
 - Additional off-site parking is located in Carderock Park (you cannot leave your car parked there overnight)
 - Note that walk from entrance gate to the testing basin is long (approx. 3/8 mile)



Directions to Base for Shipping

- Personnel driving devices onto base
 - Use front gate for access in mornings and evenings
 - For front gate address map search use: “NSWC, Carderock Division, Carderock, Bethesda, MD 20817”
- For Commercial Shipping
 - Delivery services must use back gate (aka Gate #3, aka Truck Gate)
 - Carrier directions and access document available [HERE](#)



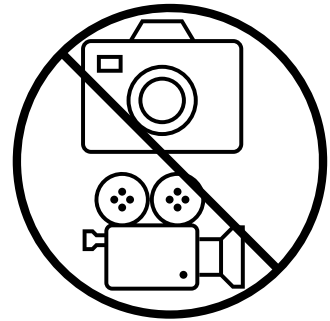
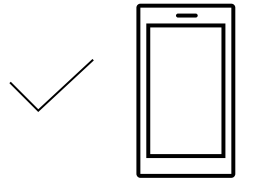
On Site Badges

- Issued by visitor center on first day on site
- All team members must have badge in their possession all times while on base
- Badges collected by Test Director upon leaving base on the final day



Personal Electronic Devices (PEDs)

- Teams wishing to use computers and/or WiFi/Hotspot devices on base must submit Form D5239-9: Personal Electronics Device (PED) Form (also in Appendix F of the Rules Document)
 - Only bring computers and WiFi/Hotspot devices required for testing purposes
- Cell phones *do not* require completion of Form D5239-9
- No cameras or video recording devices are allowed on site
 - The DOE/Navy team is arranging an approved photographer. No photos from any device (phone, camera, tablet, laptop, etc) are permitted
- USB stick-type storage devices are strictly prohibited
- All personal electronics must be disclosed to the organizers upon arrival for approval and to be briefed on where electronics are allowed to be operated
- All forms should be submitted to organizers at OceanObserving@nrel.gov no later than November 30, 2021 - please limit the number of personal and electronic devices to what is needed to complete the testing



Other notes

- No alcohol
- No weapons (knives with blades less than 7.6cm (3.0in) are acceptable)
- Rendering honor to the flag: Each morning at 0800, the U.S. flag is raised in front of Building 2. Given the right conditions, the U.S. national anthem can be heard in the parking lot of Bldg 18. If the anthem can be heard, all personnel are expected to come to parade rest and face the direction of the flag.
- No open-toed shoes
- No need to dress in formal business clothes, please dress appropriately for a technical test



Action Items: All Due May 6

- US citizens: Visitor Request Form (SECNAV 5512-1)
 - Submit via DoD SAFE: <https://safe.apps.mil/>
- Foreign Nationals: Foreign National Visitor Form (D5239-9);
- Submit via DoD SAFE: <https://safe.apps.mil/>
- Teams wishing to use computers and/or WiFi/Hotspot devices on base must submit Form D5239-9: Personal Electronics Device (PED) Form – see Appendix F of the Rules Document
 - Submit to OceanObserving@nrel.gov

Weather and Parking Lot Working Environment

- Summer Weather
 - Warm
 - Temperature
 - Lows – average 66° F (18.9° C)
 - Highs – average 84° F (28.8° C)
 - Precipitation average 37% chance
- Office CONEX (prize admin, teams welcome)
 - HVAC
 - Interior: Approx. 5.5m long, 2.1m wide, 2.1m tall
- Tents (teams)
 - Will have air conditioning in work trailers
 - 2 types of tents will be made available
 - 3m long, 3m wide, and 2.4m tall
 - 6m long, 3m wide, and 2.4m tall
- Teams will be placed on arrival sequence



MASK Parking Lot Map

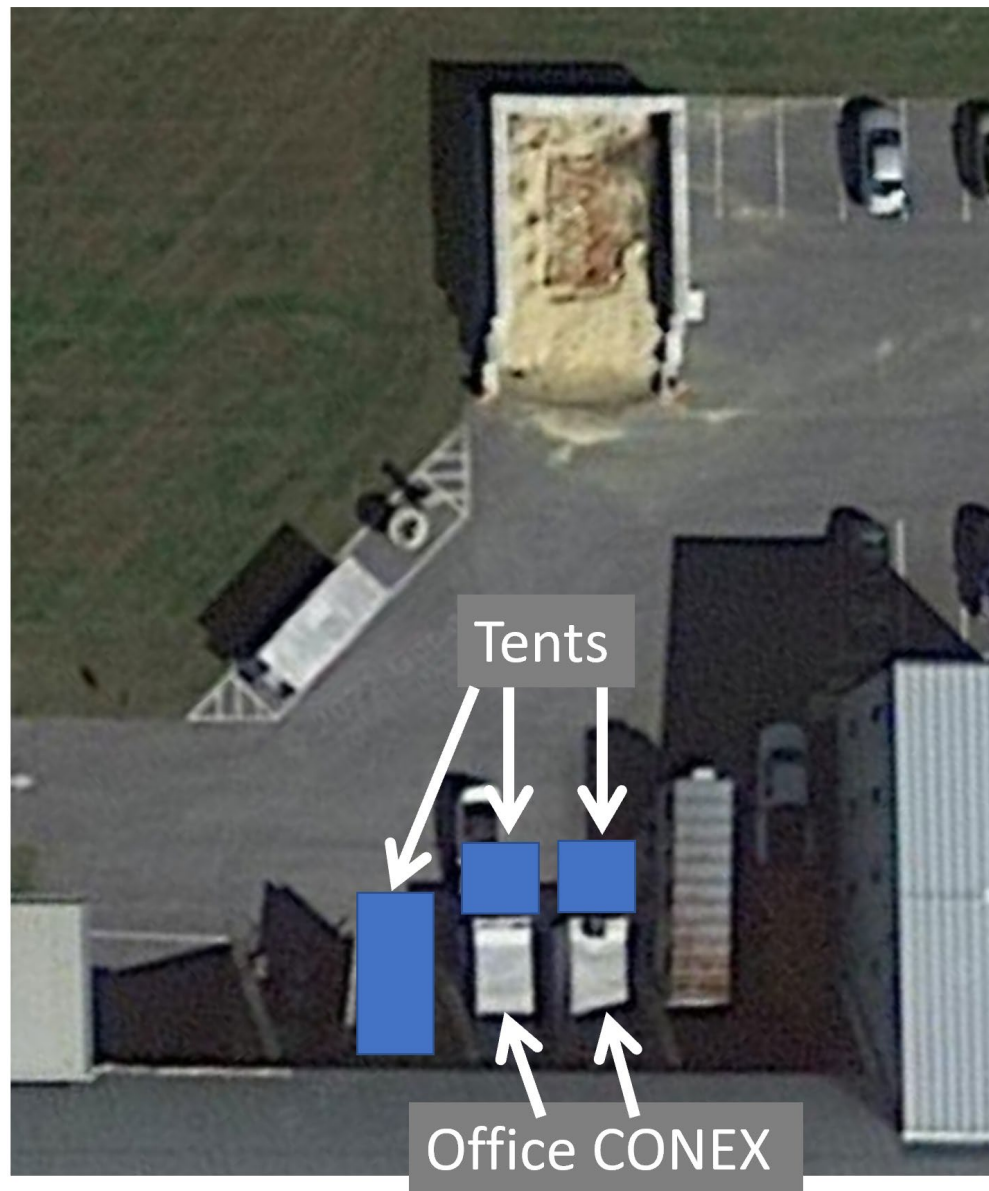
Right here!



Main Entrance



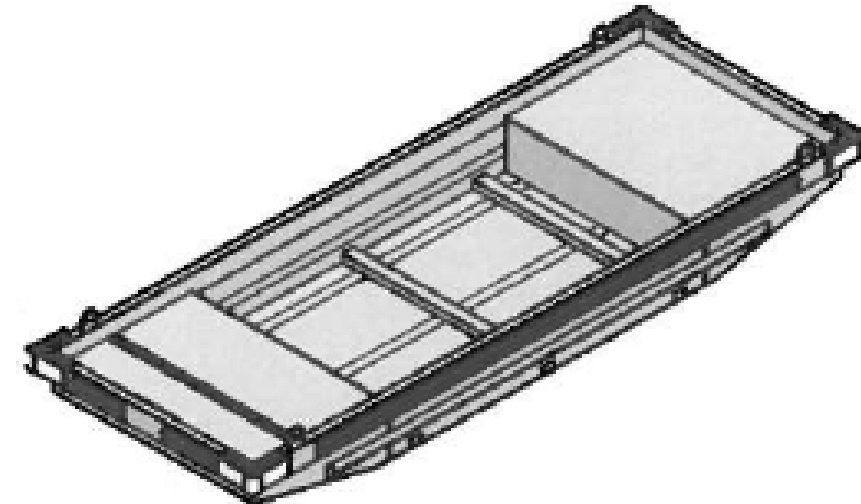
Parking Lot Working Environment



*Notional footprint

Mobility at NSWCCD

- Parking lot mobility
 - Teams are required to bring your own cart or dolly for transporting your device within a 4.5m x 4.5m space
 - **NSWCCD will not be providing carts for devices.**
- MASK mobility
 - Must account for limitations provided in Rules Document, Appendix I
 - In-water positioning and access to devices via small boat (“punt”)
- Optional towing point for positioning in waves
 - Please mount to hard point and not the shell
 - Will not take data while under tow



Crane Operations Safety

- Lift points required on device
- Ideally, the fully-assembled device is placed into the water
- Hard hats required during lifts, not like this picture 😊
- Only MASK staff can operate cranes and other heavy machinery



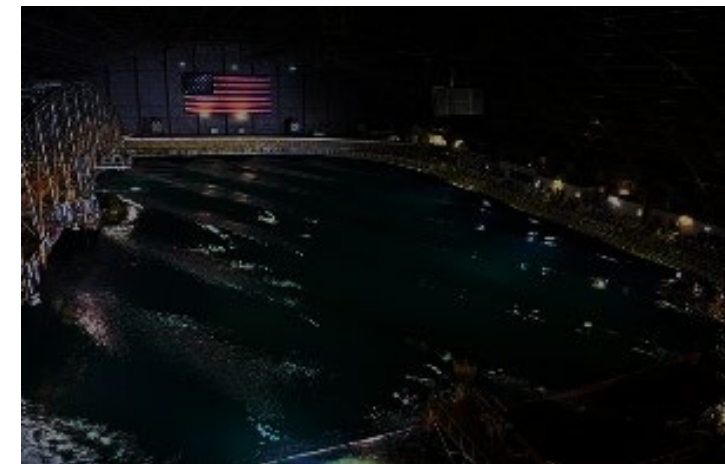
Forklift Operations Safety

- Please consider palletizing large and/or heavy objects (e.g. device body(-ies), tool chests, carts, etc.)
- Securely package sensitive hardware
- Eyes up and aware
- Only MASK staff can operate forklifts and other heavy machinery



Tools

- VERY tight timeline to perform all tasks - must minimize time
 - Biggest delay in assembly and rigging is *tool availability*
 - Solution:
 - Bring EVERY tool you may need
 - At least one wrench for each type of fastener on your device
 - ALL specialized tools (torque wrenches, etc.)
 - Highly recommend organizing your tools
- Any tools provided by Carderock are considered auxiliary or backup
- Label your tools
- MASK is dark working environment: bring flashlights and/or headlamps
- Examples: soldering irons, wire cutters, adjustable wrenches, power supplies, etc.
- All needed lubricants and possible hazardous materials needs pre-approval before arrival and appropriate MSDS Sheets



Personal Protective Equipment (PPE)

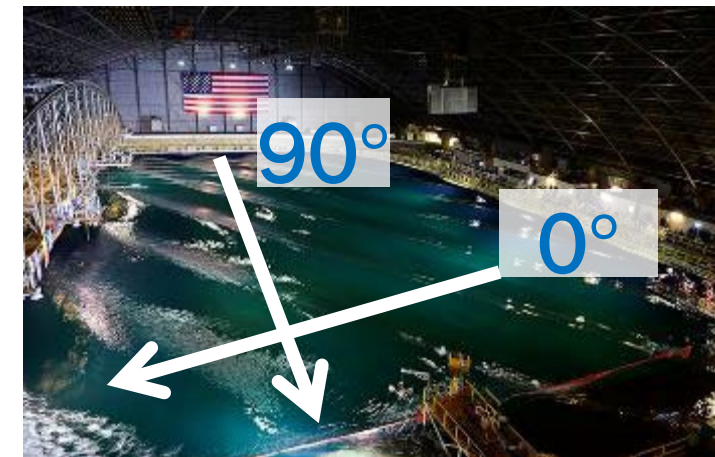
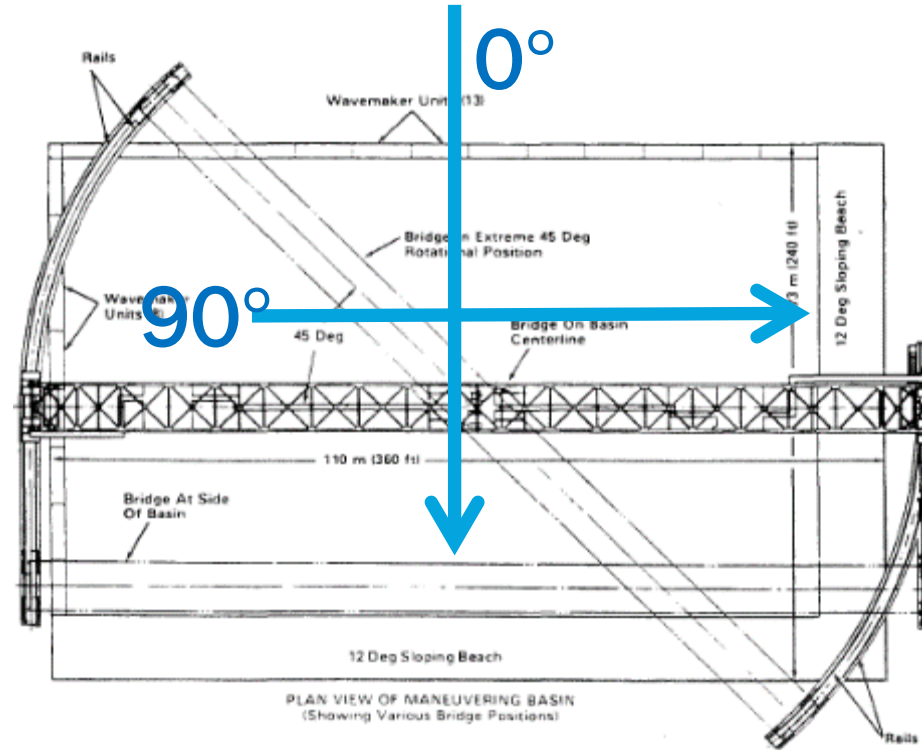
- Finalist-provided PPE
 - Gloves if handling HAZMAT
 - Steel-toed shoes if involved in crane and forklift ops, though Carderock will assist
 - Masks (if required by facility/local regulations), sanitizer, etc
- Carderock-provided PPE
 - PFDs (lifejackets)*
 - Hard hats*
 - Safety glasses*
 - Ear plugs

* Any safety gear borrowed from Carderock will be shared among teams and must be returned at the end of testing. Teams are encouraged to bring their own PPE.



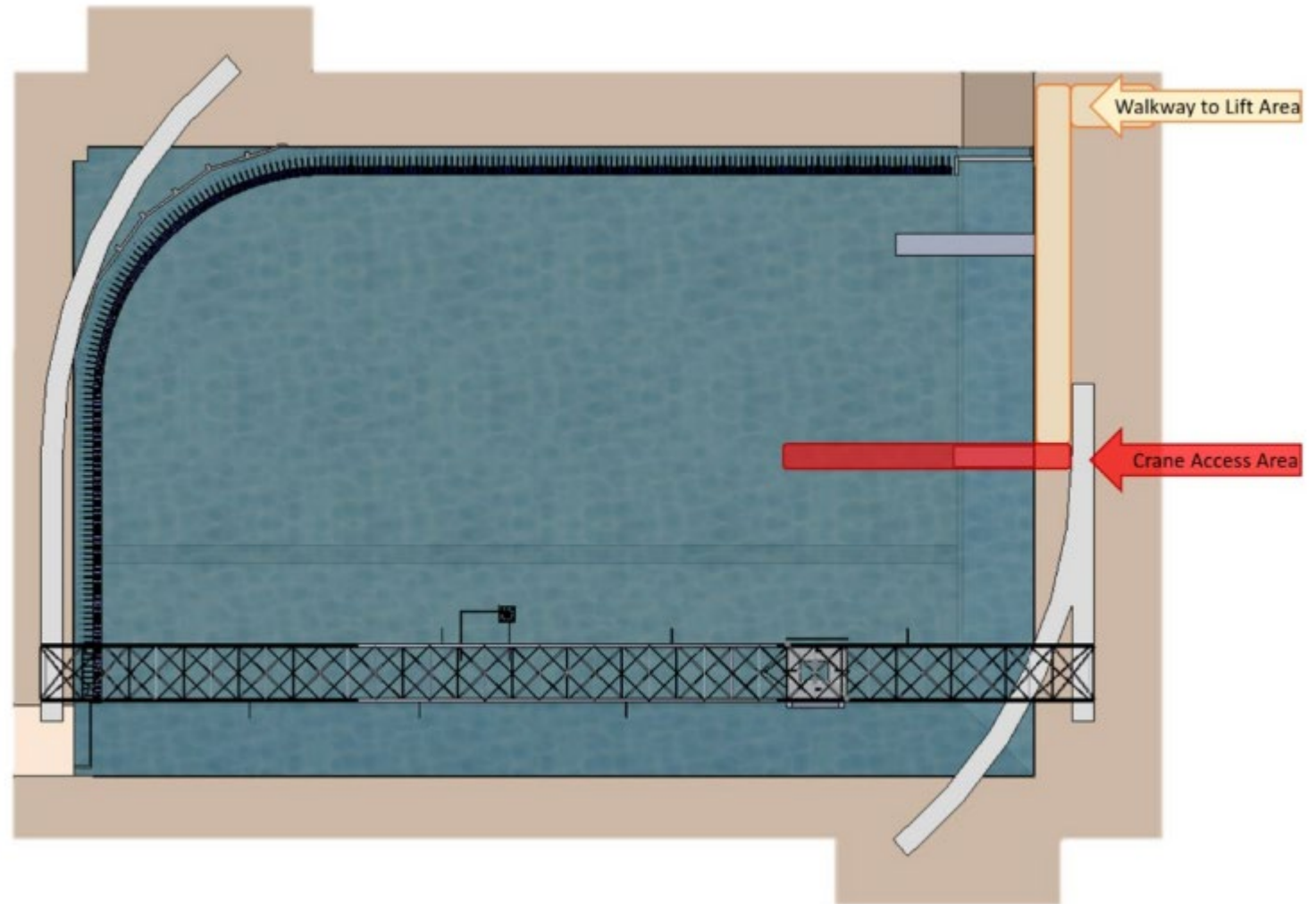
MASK Conditions

- Flap-type wavemaker: Extremely repeatable wave conditions
- Beach: One of most absorptive/dissipative basins available (quantification of reflection coefficients may be publically available)
- Basin is fresh water
- Additional info in Rules Document, Appendix B



MASK Crane

- The MASK Basin has a center-line overhead crane with a single hook that can only reach ~1/5 of the length of the basin (highlighted in red in the image below). Your vehicle will be launched in this small area and moved either under its own power or towed by a small boat to the starting location. During recovery, your vehicle will again move either under its own power or be towed by a small boat to the crane recovery area, where the Carderock team will attach hoisting gear prior to lifting.



Daily Schedule

Time	Day 1: Check-in/Staging	Day 2: Dockside	Day 3: Tank Test	Day 4: Demobilization
0700	Teams check in at facility for badging, COVID screening, administrative tasks.			
0800	Mobilization/staging for testing in designated CONEX box or tent staging area			
0900	Prepare equipment for upcoming testing	Presentation	Maneuvering	Continue PMA with judges, if needed
0930		Dry Check		
1030		Pre-dive Check	Recharge	Crating, packing up, staging for shipping
1300		Wet Check	Optional Integrated Test	
1500			Post-dive checks, PMA	
1600	Wrap-up daily event, stow equipment in designated CONEX box staging area			
1700	All parties MUST vacate Carderock premises before this time			

Dummy Payload

- Day 1: Return DPPM to OOP staff
- Day 2 AM: Receive and install Scoring DPPM
- Day 2 PM: DPPM may remain installed in the vehicle unless OOP staff request you remove it to facilitate data download
- Day 3 PM: Return Scoring DPPM

Questions

U.S. DEPARTMENT OF
ENERGY | *Office of* **ENERGY EFFICIENCY
& RENEWABLE ENERGY**
WATER POWER TECHNOLOGIES OFFICE