



# BUILD CONTEST

Ocean Observing Prize Office Hours: May 2, 2022

Ocean Observing Prize Administration Team

Updated: May 5, 2022

### **Will there be another meeting for competitors prior to the testing?**

- No, this is the last scheduled meeting. If a need arises for another meeting, we will send an announcement.

### **Is there a specific office to report to for badging?**

- Yes. Bring your completed base access forms (one for each person) with you to the Visitor Center, which is located at the front gate.
- For front gate address map search use: "NSWC, Carderock Division, Carderock, Bethesda, MD 20817"
- See the [BUILD Competitor Logistics Workshop/Testing Brief](#) resource for more details

### **What is the process for base access for a naturalized citizen?**

- If the person requesting access has a social security number, the only form needed is the base access form 5512/1.
- Bring your completed base access forms (one for each person) with you to the Visitor Center, which is located at the front gate.

### **Can we bring more than three team members, up to six?**

- Teams may bring more than 3 people, but only 3 team members will be allowed on-site at the same time. Please do not bring more than three team members during Day 1 check-in and badging. Badge only the people who need to be on base each day. Additional team members should report to the visitor center for badging shortly before they plan to rotate out.

### **When does the visitor center open? When should we arrive?**

- The visitor center opens at 6:30am.
- On day 1, please arrive by 7:00am to allow adequate time for badging.
- On days 2-4, you may arrive anytime between 7:00am and 8:00am.
- Please note that you may not begin working on your vehicle until 8:00am.
- Teams will have access to the Carderock test site during their assigned test days from 7:00am to 5:30pm
- All teams MUST be off base by 5:30pm every day

### **Where do we go after we get badged?**

- See the [BUILD Competitor Logistics Workshop/Testing Brief](#) resource for more details
- 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

### **Do competitors have access to the detailed schedule?**

- See slide 21 in the [BUILD Competitor Logistics Workshop/Testing Brief](#) resource for more details

### **What time does activity end each day?**

- Testing will conclude around 4:00pm.
- All teams MUST be off base by 5:30pm every day

### **Does everything need to be packed or can things be left out between days?**

- As long as things are tucked into workspace and if things are out of the way, this is fine. Tools can walk off - probably put these away because others are working in the space.

### **Where will our device be stored overnight? In the water, on land? Inside, outside?**

- Your device will be stored on land, either in the CONEX or under your tent on the evening of day 1 and possibly day 3. On day 2 and possibly day 3, your vehicle may stay in the MASK facility overnight.

### **We are not shipping our device. Is there a special form to bring the mechanical equipment into the base? It will be visible in the back of the van.**

- The [Electronics Device Permissions 5239](#) form needs to be filled out for electronic devices, but no other forms are necessary to drive your equipment into the base.

### **Should we bring our own tent?**

- Not necessary. Each team will have a 20 ft ISO container set up as an office with a 10x10 tent with one larger overflow tent.
- As previously communicated in the [Build Contest Webinar Q&A Responses](#)
  - Each team will have one 4-walled, outdoor tent or container to stage their crates and equipment in for all 4 days. On Day 1 and Day 4, teams will not enter the MASK building, they will remain outside and will have the option of utilizing one of two CONEX boxes to aid in mobilization and demobilization.
- As previously communicated in the [BUILD Contest Rules 3.5.3. Staging Area:](#)
  - The MASK basin parking lot will be used by the four teams concurrently on base at any one time. Facilities available will be a mix of Conex containers with heating and electrical power, tents, and an area open to the elements.

### **What is the distance from the closest power source to team work areas?**

- There will be outlets inside the office CONEX box - 120 VAC. Extension cords may be provided as necessary.

### **Do you have small "garden sized" 4 wheeled carts for us to use?**

- No - any carts to move team equipment will have to be provided by teams, if needed.
- Per the [BUILD Contest Rules 3.6.12. Shipping:](#)
  - Included in the packed materials, competitors must provide their own wheeled carts that securely and safely stow their system for transport to and from the tank. No carts will be provided by the test facility staff or prize staff, and competitors will be forbidden to carry loads larger than 15 kg to and from the tank unassisted by a cart, dolly, or similar. The cart will also be used when presenting the system to judges during the dry checks. Competitors must ensure that the cart/cradle allows relevant

parts of the system to be accessible for judges to properly assess with reasonable effort.

**Are there any hills in the parking lot where we will be pushing our vehicles?**

- No.

**Should we drive our device back off campus at the end of Day 4, or may we make arrangements to have a mover/shipper remove it afterward?**

- If shipping is paid for and provision of a bill of lading, facility will load onto a truck. Accommodating the requested pick-up date will depend on Carderock's resource availability.

**Will a 1" hole on lift points be large enough to use directly with the crane?**

- No - the hook is too large to directly interface with a 1" opening, but Carderock can provide shackles/hardware to adapt.

**What PPE are teams required to bring, and what PPE will Carderock provide?**

- Per the information communicated in HeroX FAQ #18, individuals should, at a minimum, provide their own safety toe shoes if they plan to be near the vehicle during lifting operations. If you will not be near the vehicle during lifting operations, you do not need safety toe shoes.
- Hard hats, safety glasses, and hearing protection may be provided by Carderock when needed, though there may not be enough to lend to all three team members. Teams are encouraged to bring their own PPE if they can.
- PFDs will be provided by Carderock, teams do not need to supply their own. PFDs do not need to be worn when working in areas with railings.
- See the [BUILD Competitor Logistics Workshop/Testing Brief](#) resource for more details

**Will we have access to set up the machine once it is in the water, or does it have to be all set before the lift?**

- Ideally, teams will complete setup of the vehicle before it goes in the water. The vehicle can be hoisted over land at the side of the tank and held in position while teams complete setup (e.g. removing wheels)
- Any work that must be done once the device is in the water will need to be communicated verbally to the boat operators.

**Will competitors be allowed in the Carderock boat in the tank to handle their systems on the water?**

- Per the information communicated in HeroX FAQ #17, this will not be allowed. In the office hours, we misspoke and indicated teams would be allowed on the water. We apologize for any confusion this may have caused.
- Specific instructions for device orientation and handling on the water should be well explained to Carderock staff before deployment. Competitors will be able to communicate with Carderock staff while they are on the water to provide further guidance.
- Excerpt from the Rules document:
  - A small punt (flat bottom boat) will be used to position articles under test in the basin prior to the onset of in-water portions of the test. During in-water testing:
  - **Competitors will NOT be able to dive in the tank, even if they have a dive certification.**
  - **Competitors will NOT be allowed on boats in the tank.**

- **Competitors will NOT be able to handle the systems once they are in the water.**
- Only facility personnel will be able to dive in the tank or handle the systems once they are in the water.
- No further physical intervention will be possible while testing unless a pause or stop work is called, at the expense of allotted testing time.
- Personal flotation devices (PFDs) must be worn at all times when operating outside of safety rails in the test basins. United States Coast Guard-approved personal flotation devices are supplied by NSWCCD facilities personnel.

**If we are not allowed on the boat, can we give voice instructions like, turn that yellow knob to the left?**

- Yes.

**Are there divers on site?**

- No.

**Is there a shallow area of the tank where teams can interact with devices?**

- No, the only way to access the devices in the water is by the small boat and at the surface by the boat operator.

**The tank is 20 ft deep at minimum?**

- The crane can only place devices in the deep part of the tank
- See the [BUILD Competitor Logistics Workshop/Testing Brief](#) resource for more details

**Is the water in the tank a salty or chlorinated water?**

- Neither - the water in the basin is fresh and not chlorinated
- It is dark in the facility to prevent growth/keep water clean
- Do not plan on a bright workspace - bring flashlights

**What is the air temp in the basin room? Do we need jackets?**

- The facility is temperature controlled and usually comfortable (estimated around 70-75F). Jackets will probably not be necessary

**On Day 2 there is a presentation, do we need a powerpoint for that? Will there be a projector and screen?**

- No, a PowerPoint is not required, though it could be a good way to present. This presentation should basically be a repeat of your TDR, highlighting any changes, and introducing your system to people who have not seen it before. There will be a conference room with a monitor to facilitate sharing a PowerPoint. It is also acceptable to not use slides and instead use your vehicle as a prop, as long as you are able to cover all the required information using this method.

**We were told there would be no GPS available in the tank. Is the GPS function test happening outside?**

- Yes. During the pre-dive test on Day 2, your vehicle will be brought outside to verify GPS and satellite communications.

**What if the area does not have satellite coverage (e.g., for ARGOS network)?**

- This will be scored at the reviewers discretion.

**Do you know what the limiting input voltage to the DPPM is before it is damaged?**

- The maximum input voltage for pin 1-1 (WEC DC power IN to DPPM) is 200V
- The maximum expected input voltage for pin 1-3 (System Battery IN to DPPM) is 60V, though components are rated for up to 200V.
- Reminder the maximum input voltage to pin 2-1 (Payload power) is 60V

**If we need to, could we remove the device (off-site) overnight to work on it?**

- No. Access to your vehicle will be limited to 8:00am-5:30pm on-site each day.

**Would remote operation/intervention impact scoring?**

- Remote operation/intervention will likely impact scoring and may not be allowed. Depending on when the intervention happens, the test could be repeated, if time allows.

**What if we cannot meet one of the grading criteria, but have a way to continue if we remotely take over or reset, can we continue with a reduction in the scoring 1/2/3 for that criteria?**

- This will be evaluated on a case-by-case basis and scored accordingly. It will also depend on timing, since the schedule is quite tight.

**Can we have an overview of the video submission expectations?**

- Teams should have received an email last week with a good summary of what we're expecting. We really want to make sure you have a prototype ready to go into the tank - we do not want the Carderock test to be the first time the device gets wet.
- Any/all actuation needs to be shown functioning.
- We want to see DPPM integration into the system - bolted down and plugged in.
- We want to see the vehicle in some kind of/body of water. It does not need to be a test tank. If you have questions about whether your wet demonstration will be acceptable, please reach out to [OceanObserving@nrel.gov](mailto:OceanObserving@nrel.gov)

**What kind of production quality and file format of video are you looking for?**

- Do not spend time on production quality - this is for internal review only.
- Anything that can be played on a Windows PC is acceptable for format.
- Narration is helpful - if you choose not to narrate, please send a written description for each video.
- You may submit one video or four separate videos