

# INFINITE RECHARGE<sup>SM</sup>





SunDome Specific Information  
March 4, 2020



**2020 DISTRICT SCHEDULE**  
**PACIFIC NORTHWEST DISTRICT**  
**SUNDOME EVENT**

**Competition Schedule**

|                                 |  |
|---------------------------------|--|
| <b>Thursday, March 19, 2020</b> |  |
| 5:00PM-9:00PM                   | Pits Open                                |
|                                 |  |
| <b>Friday, March 20, 2020</b>   |  |
| 8:00AM-10:30AM                  | Pits Open, Practice Matches, Inspections |
| 10:30AM-11:00AM                 | Opening Ceremonies                       |
| 11:00AM-1:00PM                  | Qualification Matches                    |
| 1:00PM-2:00PM                   | Lunch                                    |
| 2:00PM-7:30PM                   | Qualification Matches                    |
| 8:00PM*                         | Pits Close                               |
|                                 |  |
| <b>Saturday, March 21, 2020</b> |  |
| 8:00AM                          | Pits Open                                |
| 9:00AM-9:30AM                   | Opening Ceremonies                       |
| 9:30AM-11:30AM                  | Qualification Matches                    |
| 11:30AM-12:00PM                 | Alliance Selections                      |
| 12:00PM-1:00PM                  | Lunch                                    |
| 1:00PM-4:00PM                   | Playoff Matches                          |
| 4:00PM-4:45PM                   | Awards/Closing Ceremony                  |
| 5:15PM*                         | Pits Close                               |

*\*Schedule subject to change. All times are estimated based on flow of rounds.  
See Pit Administration table for updated times.*

# SunDome

Is a Thursday, Friday, Saturday event

- Day 1 is Thursday
- Day 2 is Friday
- Day 3 is Saturday

To lessen confusion, the rest of this PowerPoint will talk about Day 1, Day 2 and Day 3

# Overview of Presentation

- Event Specific Information
  - General Logistics: Parking/Busses/Food
  - Load in / Load Out
- Walk through of the event
  - Tour of the areas
  - Day 1: Inspection Day
  - Day 2: Qualifications
  - Day 3: Eliminations

# Before you arrive!

- We need your main contact while onsite to visit <https://firstwa.org/rsvp/> and register
  - By default you will not receive a pit table from us. If you need us to provide you a table, you need to request one when you register on firstwa.org
  - Acknowledge you have 3" wheels
  - Student/Mentor count
  - Your mobile phone number
- Please do this by **Monday, 3-9-20** (if you complete this form after 3-9-20 you may not receive a table)

# Logistics: Where is the event?



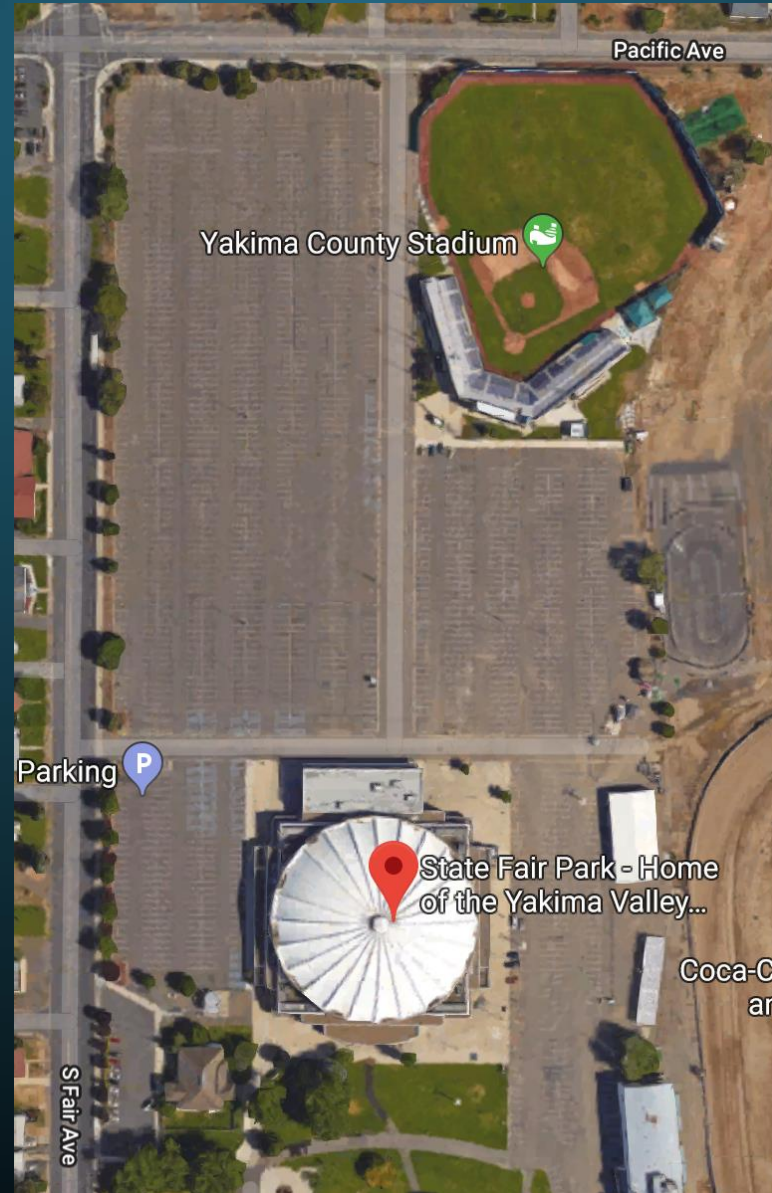
# Day 1 Arrival

- Please don't arrive before 4:30 pm
- Doors will open at 5:00 pm!
- Please do not show up early!
  - We will be setting up prior to 5:00 pm and won't be ready



There is plenty of  
parking at the venue.

There is no overnight  
parking available



## FRIDAY PARKING

# Day 2 Arrival

- Please arrive after 8:00 am
- Please do not arrive before 8:00 am!
- Please do not show up early!
- Volunteers are busy setting up and getting ready for teams to arrive
- No Teams will be allowed in the building prior to 8:00 – even if the weather is unpleasant.

# Trailer Parking

- There is trailer parking available at the venue, please park at the far end of the N. lot (and remember there may be other events going on in the surrounding areas and be gracious)
- Overnight parking is not available so please take your trailers with you when you leave each day

# Logistics: Bus Transportation

- As long as there aren't other activities going on, busses will be able to park in the lots.
- Please be flexible if we ask busses to park off site

# Logistics: Food

- Concessions will be open Day 1, Day 2 and Day 3
- Bringing Food?
  - Remember, this is a public venue. They are being flexible with their no food rules and will allow some food to be brought into the venue (I suggest having sub sandwiches in a cooler or something like that for your team)
  - They will not allow food from other restaurants in the building so if you choose to order pizza or Jimmy Johns etc, you will need to eat it outside)
  - Water will be allowed in the building but no other outside beverages will be allowed (This includes coffee) They will have an espresso stand on site where you can purchase coffee.
- Clean up after yourself

# About the pit Power

- Pit power is limited. We are putting up to 8 teams on a single 20 amp circuit
  - Power generator is shut down overnight
  - Consider charging your batteries overnight at home / hotel
    - (Remember: 12 rounds may require several batteries)
  - No compressors or other large motors
  - Limit 400 watts per team, 2400 watts per 6 team Power Alliance
  - Lighting should go with low wattage
- High school gyms have very little power
  - You may NOT use any outlets in the gym
  - The game equipment uses all available power
  - We will remove and confiscate any equipment from gym outlets until after awards ceremony on Saturday. **You have been warned!**

# Safety Glasses

- Teams are expected to provide safety glasses for their team members and spectators to use in the pits
- For everyone's safety, FIRST Washington plans to have new safety glasses available for purchase for \$2.00 a pair on Day 2 & Day 3 - we will NOT be handing out safety glasses. Please bring small bills for purchasing them. More information as to where they can be purchased will be available on site.

# Schedule Overview: Whole Event

- Day 1: Team Arrival and Inspections
  - Driver & Coaches Meeting will be at 7:30 pm **Day 1**
- Day 2: Qualification Matches
- Day 3 AM: Qualification Matches
- Day 3 PM: Final Rounds / Team Departures





# Load-In and Inspection

## Day 1: 5pm – 9:00pm

- Safety glasses are mandatory. You will not be allowed into the area without them.
- Follow instructions from onsite staff.
- You may NOT park in the loading area. The driver MUST stay with the vehicle. Drop it and park in designated area. Staff your unload team appropriately to make this happen.
- Bring a cart! You will need a cart with at least 3" diameter wheels. Our cable protection bumps are 2" in height. We recommend 4" or larger wheels.
- Your FIRST and Only goal on Day 1 is passing inspection!





# 2020 PNW FIRST ROBOTICS SUNDOME EVENT



RESTROOMS

PRACTICE  
FIELD

CONCESSION

PIT ADMIN

TO ARENA

|      |      |
|------|------|
| 948  | 2557 |
| 1318 | 2926 |
| 1595 | 2928 |
| 2147 | 2944 |
| 2412 | 3049 |
| 2471 | 3223 |

|      |      |
|------|------|
| 3693 | 4061 |
| 3712 | 4104 |
| 3812 | 4125 |
| 3826 | 4131 |
| 3876 | 4513 |
| 4060 | 4692 |

|      |      |
|------|------|
| 4980 | 6465 |
| 5803 | 6831 |
| 5920 | 7034 |
| 6076 | 7461 |
| 6442 | 8059 |

RESTROOMS

CONCESSION

INSPECTION SPARE PARTS

| Team # | Team Name                 | City     | State |
|--------|---------------------------|----------|-------|
| 948    | NRG - Newport Robotics    | Bellevue | WA    |
| 1318   | Issaquah Robotics Society | Issaquah | WA    |
| 1595   | The Dragons               | Spokane  | WA    |
| 2147   | CHUCK                     | Spokane  | WA    |
| 2412   | Robototes                 | Bellevue | WA    |
| 2471   | Team Mean Machine         | Camas    | WA    |
| 2557   | SOTAbots                  | Tacoma   | WA    |
| 2926   | Robo Sparks               | Wapato   | WA    |
| 2928   | Viking Robotics           | Seattle  | WA    |
| 2944   | Titanium Tigers           | Spokane  | WA    |

|      |                            |            |    |
|------|----------------------------|------------|----|
| 3049 | BremerTron                 | Bremerton  | WA |
| 3223 | Robotics of Central Kitsap | Silverdale | WA |
| 3693 | GearHead Pirates           | Spokane    | WA |
| 3712 | RoboCats                   | Union      | OR |
| 3812 | Bits & Bots                | Longview   | WA |
| 3826 | Sequim Robotics            | Sequim     | WA |
| 3876 | Mabton LugNutz             | Mabton     | WA |
| 4060 | Bearcat Robotics           | Chehalis   | WA |
| 4061 | SciBorgs                   | Pullman    | WA |
| 4104 | Blackhawks                 | Cheney     | WA |
| 4125 | Confidential               | Umatilla   | OR |
| 4131 | Iron Patriots              | Renton     | WA |

|      |                      |              |    |
|------|----------------------|--------------|----|
| 4513 | Circuit Breakers     | Medical Lake | WA |
| 4692 | Metal Mallards       | Toutle       | WA |
| 4980 | Canine Crusaders     | Kettle Falls | WA |
| 5803 | Apex Robotics        | Seattle      | WA |
| 5920 | VIKotics             | Palouse      | WA |
| 6076 | Mustangs             | Northport    | WA |
| 6442 | Modern Americans     | Pendleton    | OR |
| 6465 | Mystic Biscuit       | Bend         | OR |
| 6831 | A-05 Annex           | Hood River   | OR |
| 7034 | 2B Determined        | West Linn    | OR |
| 7461 | The Binary Circles   | Redmond      | WA |
| 8059 | Robotics at Eastside | Sammamish    | WA |



Map reference only, not drawn to scale



# Wheel requirements for carts, boxes, and anything rolling

- Our venues will have power cord covers (aka Yellow Jackets)
  - Our yellow jackets are 2" tall
- Your FRC robot cart **MUST** have > 3" diameter wheels
  - Wheels must be in good working order. No damaged or stuck wheels. Soft rubber. No hard plastic or steel tread wheels.
  - Maximum weight for your carts, tool boxes, etc will be 50 lbs per inch of wheel size (1 cart, 4 x 3" wheels, 600lbs max)
- Under no circumstances will we allow wheels less than 3" in diameter on ANY equipment / boxes / carts
  - Very high likelihood of damage to floors
  - You won't clear our cable management equipment
- All wheels must be non marking rubber or synthetic wheels
  - No steel wheels. No sharp wheels.

# Day 1 is Inspection Day

- Your primary goal for Day 1 is to get your robot to pass inspection.
- This is a short and intense activity. Preparation is the key to making it a good day.
- Asking for help is a good thing. Providing another team help is the highest honor in **FIRST**. Don't be bashful.
- Teams with lower numbers have experience.

# Load-in & Inspection Callouts

- **No Bag & Tag – but watch out for [R16]**
- **During Load-in, take everything to your pit!**
- **Other important Inspection changes this year:**
  - [I1] It's your team's robot – New rules around who can build MAJOR MECHANISMS
  - [I3] Multiple configurations can only weigh up to 150lbs – Any given configuration still must be  $\leq 125$ lbs
- **Be careful with:**
  - [R9] Specifically around light sources. Not required but highly suggested that any bright light source be:
    - Shrouded
    - Directed only at the target
    - Able to be turned off when not in use

# Day 1 Pits Open: 5pm

- At exactly 5 PM we intend to open the pit area for everyone.
- Please be prepared to be flexible. This is our first time in this space and our volunteers will be working hard to get everyone in the building as soon as possible.
- You must wait for clearance to enter the building.
- You MUST have safety glasses on your face!
- We can not provide safety glasses for team members. You MUST bring your own.

# Do less better

- These are smaller events.
- You are onsite for less time.
- Consider travelling light!
  - Less setup time
  - More room in your pits
  - Save the big pit displays for District Championship!

# Day 1 Team Registration: 5PM

- Your lead mentor must visit the pit admin desk starting at 5PM.
- Bring required forms
  - Team Roster printed from TIMS with hand written additions if needed. **Needs to be brought to every event.**
  - Consent forms for all team members (students and adults) who aren't in TIMS/STIMS **The expectation is that all of your students and mentors have registered and are on the printed roster. You should have very few printed consent forms.**
- Once you have turned in your required forms, you will receive
  - Your drive buttons
  - Your RFID tags for the Zebra Dart Tracking system
    - For more information see slides starting at 41 of this presentation
    - **Please remember to return these before you leave!!**

# Who to bring Day 1

- You really want your drivers and core robot builders and mentors Day 1.
- Depending on your teams logistics, you might consider having a partial team Day 1 and the whole team Day's 2 & 3.
- Day 1 is NOT a good spectator day
  - It is ALL in the pits Day 1.



# Veteran Teams

- Bring Spare Parts
- Please consider bringing unused sensors, motors, control units, and hardware for loan to other teams.

# Day 1

## Inspection Process: 5PM

- Inspection involves 4 steps
  - Size and weigh-in at the inspection station
  - Control system inspection at the CSA station
  - Physical robot inspection at your pit starting 5PM
  - Connection to the field controller at least once Friday morning
- Inspectors are your friend! Inspectors are here to help get you on the field safely and fairly. They will help you pass inspection.

# Starting the inspection process

- You may enter the weight / size line at any time after 5PM.
- After weight and size, stop at the CSA desk for the control software check.
- You may sign up at the Inspection desk for an in-pit inspection appointment starting at 5 PM. We invite you to sign up early.

# Inspection Tips

- It is rare for a robot to pass inspection on the first attempt. It is an iterative process.
- PLEASE: Get inspected early, even if you are not ready. You might have an issue that takes time to fix.
- All teams must connect to field as part of inspection.
- You MUST pass inspection to earn qualifying points.

# WPA Key Assignment

- Your robot radio (WPA Key) must be reprogrammed at each event you attend.
- This is required to connect & compete at the field.
- A kiosk (with instructions) is provided for you to program your radio.
  - The kiosk will be located at inspection or pit admin

# Word to the Wise

- Day 1 is no longer the final build day. It is now pass inspection day!
- Do not be bashful about asking for help. We have all been there before.

# End of Day 1

- The pits close at 9:00PM on Day 1.
- You **MUST BE OUT OF THE BUILDING** before 9:00PM. The building closes at 9:0PM.
- We dislike doing it, but we will come lead you out of the building starting at 8:55PM. No exceptions.

# Practice Rounds: Day 2 8:30 AM

- Practice matches are scheduled, and will run from 8:30 AM to 10:00 AM
- You have to pass inspection to run a practice match.
- It is very common for teams not to be ready for their scheduled match in the mornings. We will accept teams on a first come/first served basis who wish to take an unscheduled practice round. Check in with the lead Queue Manager to get on the list.
- Priority will always be given to teams scheduled and/or teams who have not been on the field at least once. Be gracious and professional if you get bumped for a higher priority team.



# Connecting to the field: The Final Step

- If you run a practice match during Day 2 morning, the field computer will remember that as your last step of the inspection process.
- If you are unable to make a practice match, we are going to ask you to take your robot and control system out to the field for a quick 5 minute test to insure your system can connect to the field. Your robot will not be on the field, we will simply connect it to the field while sitting on your cart.
- THIS IS A MANDATORY STEP!
- Many simple issues are solved by doing this on Day 1 that would otherwise cause you problems when it really counts!
- Our goal is for you to connect to the field by 10 AM Day 2

# Machine Shop Open: Day 2

- We have a volunteer machine shop onsite to help you fabricate replacement parts.
- The shop has small mills, lathes, and various other tools.
- **ONLY AUTHORIZED MACHINE SHOP VOLUNTEERS MAY USE THESE TOOLS!**
- We have excellent volunteer machinists. However, there are limits to what they can do for your team.
- We have a TIG welder.
- The machine shop has request forms for your team. It will be located near the loading ramp on the arena floor.
- In general, the machine shop will NOT loan you tools.

# Day 3: Load Out

- No parking in load out area.
- Load out during elimination rounds on Day 3 is fine

# Quiet room & Photo Booth

- 3049 will be hosting a quiet room at the event.
  - We are trying to find a space, if we do, the room number will be posted at Pit Admin
  - For the quiet room to run, we will be looking for adult volunteers from each team to sign up for a shift (much like we have done for the safety glass table) If we don't get enough volunteers, we will not have a quiet room.
  - Students may sign up for 10 minute periods at pit admin (up to 10 students at a time) to remove themselves from the stress of competition. Not a hangout room, but focused on getting ready to return to the loud venue. 5588 will provide room monitors.
- 4980 will be hosting their faces of engineering booth at the event.

Exciting new technology during  
match play this year!

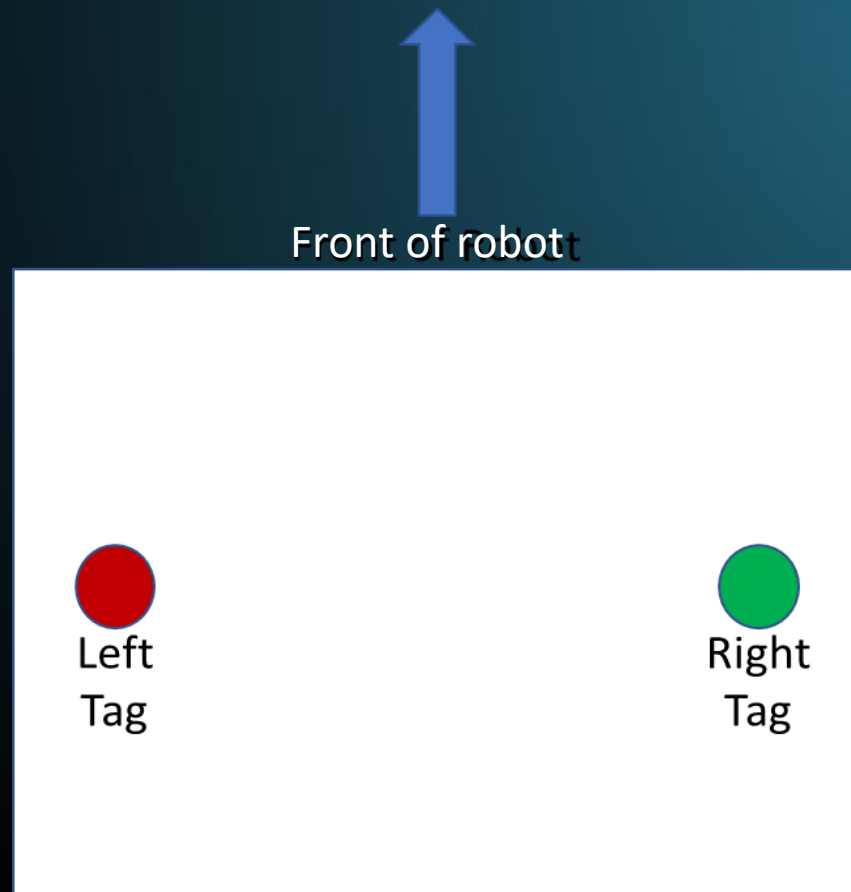
Zebra Technologies  
&  
FIRSTWA

# General Information

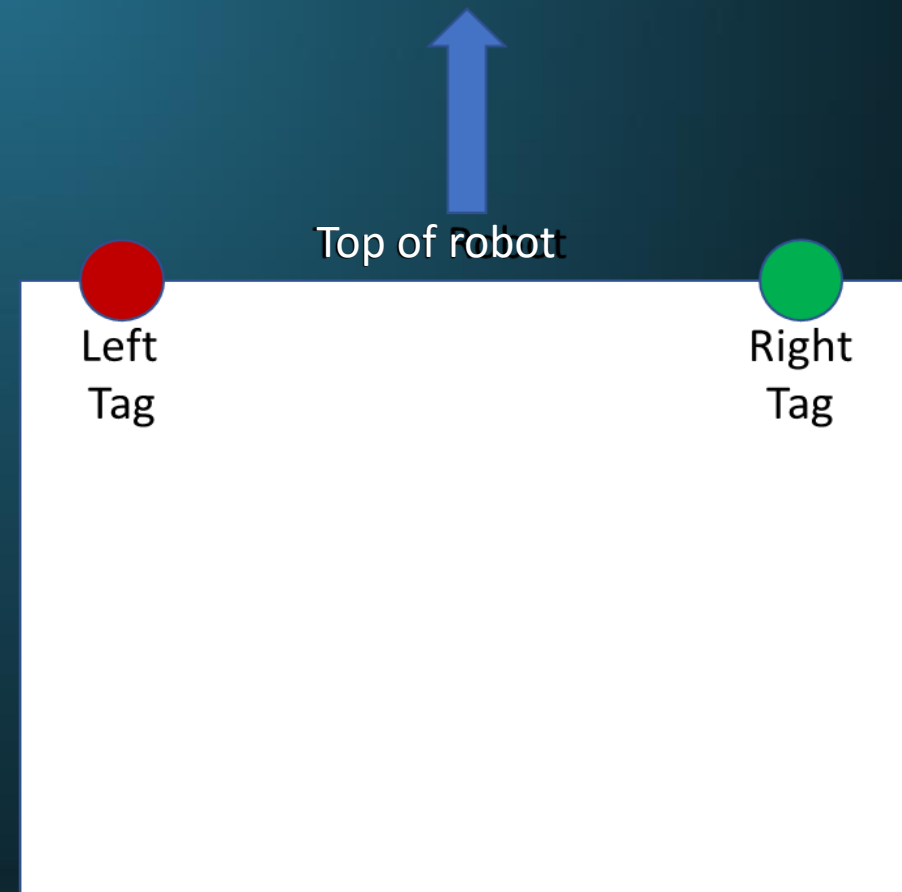
- Data collected 12 times per second
- Data collected for all robots every match of every event
- We can determine robot velocity, heading, acceleration, kinetic energy, and much more
- Trending of robots through the season

# Attaching Tags

- Installed via double-sided tape and cable ties (provided by FIRSTWA)
- Tags must be placed high on the robot and not surrounded by any metal.
  - Think about where you need to install your radio, then look for that type of spot for these tags.
- Keep the tags lined up from left to right; draw an imaginary line connecting your two tags, and that line should be perpendicular to the direction of your robot's forward motion.



Top View



Back View



# Questions

- FIRSTWA Discord

<https://discord.gg/7RJ5Vha>

- Chief Delphi

**Zebra MotionWorks™ for FRC 2020 Location  
Announcement**

# Curriculum used to enhance *FIRST* in schools

Coaches! Please share with *FIRST* Washington what curriculum (if any) you utilize to enhance *FIRST* in your school. Common ones include: Project Lead the Way (PTLW) Core Plus and Skills USA.

Many corporate partners and the State of Washington wants to know so please let us know. Oregon and Alaska teams...please share too!

This information will help us continue to build the case for additional resources for you all (space, funding, equipment, etc.)

Take a minute to fill out this form and tell us

<https://app.smartsheet.com/b/form/6970441f3f0648aca5a40c859e603520>

# The Elephant in the room...Covid-19

I know everyone is feeling uneasy about Covid-19 going into the next several weeks. I want to assure you all that we are working very hard to ensure that are events are able to continue safely. Here are some of the things we will be working on from our end:

1. We are closely monitoring updates and following guidance from the Washington Department of Health, county health departments, local school districts, and the CDC.
2. We are actively communicating with our sites to stay updated on what is happening in their districts/areas.
3. We are working on contingency plans, including collaboration with FIRST nationally, and exploring options for teams to compete even if specific events have to be canceled or if a particular teams is unable to attend an event for which they are registered.
4. We have suspended the hi-five line for awards, and handshake at finals, and are coming up with alternate ways to celebrate our teams.
5. We will be selling new safety glasses for 2.00/pair rather than handing out and reusing safety glasses.
6. We will be communicating with our volunteers regarding steps we can all take at competitions to promote good hygiene practices as well as adding signs, hand sanitizer & bleach wipes to each of our event trucks.

# Here is what you can do to help us keep everyone safe and germ free.

1. Actively read the emails sent by FIRST Washington and ORTOP as they may have information critical to your event.
2. Share this information with your students **and parents** to keep them updated.
3. Ask your students and parents to please remain at home if they are feeling ill.
4. Bring hand sanitizer for your team and use it liberally (we will be doing the same for our volunteers at the event)
5. Follow the instructions set out by your district.
6. Speak with your students about contact at the competitions. I noticed most students were hi-fiving others in the stands as they were heading down for awards. Talk with them about alternate ways to celebrate each other without hi-fives (elbow bumps maybe?)

We recommend keeping up with the CDC recommendations on prevention and treatment:

<https://www.cdc.gov/coronavirus/2019-ncov/about/prevention-treatment.html>

Most of these suggestions are common sense personal hygiene precautions. Please emphasis with your team members and guests.

# Thanks for viewing

- You can contact [arime@firstwa.org](mailto:arime@firstwa.org) with additional questions
- These slides will be posted on the SunDome event page on [firstwa.org](http://firstwa.org)