EVENTS COMMUNICATIONS

INTRODUCTION:

The ability to effectively communicate is critical to the operational success of the event. The development of a Communications plan establishes protocols for how information is to be reported, by whom, and how frequently. To create an environment that encourages the consistent and reliable free-flow of information to all event stakeholders, take the following into consideration:

Interoperability is key. Understand the needs of the different event groups (i.e. staff, agencies, volunteers, athletes, spectators, etc). The way you communicate internally with race personnel is going to be different than how you communicate with athletes and spectators.

Create notification trees to establish who is notified in the event of an incident and how the incident is communicated. To avoid confusion and reduce response time, develop emergency messaging scripts for all types of incidents in advance of the event.

Ensure that communication platforms have redundant backups. Do not rely on any single method or system of communicating for operational and/or emergency issues. Equipment should be tested prior to the event to ensure it is in working order.

In this section, we'll explore how to apply the principles above into a layered Communications Plan involving the following:

- Emergency Notification System (ENS)
- ENS Messaging Scripts
- Event Alert System (EAS)
- Race Hotline Number
- Communication Technology

*Note: While this Guide does provide recommendations for Communications and Emergency Response, all planning and decision-making regarding the event is at the discretion of the local Race Director.

EMERGENCY NOTIFICATION SYSTEM:

The Emergency Notification System (ENS) refers to mass communication to your full database of volunteers, participants, vendors, and staff via direct email message, event app push notification and/or SMS text message. The effectiveness of these updates is largely contingent on the accuracy and comprehensiveness of the contact information on record.

Event App Push Notifications:

If your event has its own app that is available as a resource to view race information, encourage users to turn on their push notifications. This feature can be used as a way to communicate emergency updates to the masses. Since the app may be widely downloaded by many different event stakeholders including athletes, sponsors, spectators, and media this system should be utilized for general updates. Communication that requires specific instruction tailored to certain groups may be better served via email or SMS text messaging where there is more control of the distribution list.

Email Notifications:

Leading up to the race, emails are the primary form of communication between race management and athletes, volunteers, and vendors. As such, they are conditioned to check their email in anticipation of race updates. In the case of emergency communications, messages should be succinct and provide clear direction for next steps.

SMS Text Notifications:

During the athlete and volunteer registration process, most events collect cell phone numbers as one of the required registration fields. Even though you may have access to this information, companies are not legally allowed to utilize this data to send SMS text messages without explicit approval from the individual to use their phone number for this purpose. There will need to be an opt-in process where the person must make a deliberate selection to receive SMS text messages from race management.

Consult your race registration platform for their suggestions on the best way to incorporate this opt-in/opt-out within your existing registration process. The end goal is the ability to generate a clean data output of those who are eligible to receive messages to be able to upload directly to a mass SMS text notification platform. There are many of these platforms on the market that offer annual and/or monthly plans that might fit your needs. Here are a few suggestions to kickstart your research:

MASS SMS TEXT ALERT SYSTEMS		
PROGRAM	**WEBSITE**	**NOTES**
SimpleTexting	simpletexting.com	Mass messaging platform that also allows for the inclusion of custom fields (i.e. first/last name) for messages to feel more personal. Month-to-month and annual subscriptions are available.
SimplifiedAlerts	simplifiedalerts.com	Easy-to-use mass text alert system that provides the ability to send critical messages to the masses right from your mobile device. Month-to-month and annual subscriptions are available.
Alert Media	alertmedia.com	Send unlimited messages to your audience via voice call, text message, email, mobile app push notification, social media, desktop alerts, and unlimited custom channels.

Below are a few tips for the successful implementation of your SMS text alert notification system:

Get as many people as possible to opt-in: For maximum reach, include the opt-in selection within the registration process from the time it is initially launched until the event. Also, in your pre-event email blasts to registered athletes/volunteers, include the opt-in link with reminders for them to opt-in if they haven't already.

SAMPLE SMS TEXT PROMOTION:

Stay in the know and sign up to receive text communications from [INSERT COMPANY NAME]. By opting in, you'll get the latest information about the event including emergency messages and alerts regarding time changes, weather or route updates, and other important information. Sign up today!

SAMPLE SMS TEXT OPT-IN:

☐ By checking this box, you are opting into receiving SMS text messages from [INSERT COMPANY NAME] when a warning/emergency needs to be communicated.

Test the system prior to use: In the days leading up to the event, plan to send an emergency alert test to ensure the system is working. Indicate within the message that the message is simply a test.

SAMPLE SMS TEXT TEST MESSAGE

This is a test of the [INSERT RACE NAME] emergency notification system. In an actual emergency, you'll receive information on the nature of the emergency and actions to take.

Define when you will use SMS text alerts and prepare messaging in advance of the event: Prior to the event, align with your team on which emergencies are alert-worthy. It is important to define what you'll use your system for in advance of the race and have that messaging already crafted to be able to deploy quickly.

EMERGENCY NOTIFICATION SCRIPTS:

Below are examples of sample messaging for the Emergency Notification System (ENS) where information will be sent via email and/or text. Also consider any other communication methods that may be at your disposal and how you might be able to incorporate this messaging via these outputs in the incident. Examples of other communication mediums:

- Race Website
- Social Media Channels
- PA Announcements
- Jumbotrons / Electronic Signage

[120 character text messages indicated in red]

RACE PAUSE

[RACE NAME] has been paused. Please remain in your location and standby for further instructions from race officials. Thank you for your cooperation.
[RACE NAME] has been paused. Please remain in your location & await further instructions.Thank you.

RACE RESUME

[RACE NAME] will resume shortly. [Insert specific scenario message here]. Please follow all instructions issued by race officials. Thank you for your cooperation.
[RACE NAME] will resume shortly. Please follow instructions of race officials. Thank you.

RACE CANCELLATION

Due to an emergency condition, [RACE NAME] is being canceled immediately. All athletes still on the course, please find the nearest race official for further instructions.
Due to an emergency, [RACE NAME] is being canceled. Please follow instructions of race officials.

GENERAL EMERGENCY EVACUATION ORDER (ALL LOCATIONS)

Remain calm and evacuate the area immediately. Seek shelter and follow the instructions from race officials and the Police Department. Stay alert, be safe, and standby for further instructions
Evacuate the [RACE NAME] area immediately; seek shelter & follow police and race personnel instructions.

GENERAL WEATHER ALERT (PAUSED)

Due to an unforeseen weather event, [RACE NAME] is being PAUSED. If you are in a safe location, please pause and wait for further instructions. If you are not in a safe location, please find race officials who will guide you to a temporary shelter and standby for further instructions.
Due to weather, [RACE NAME] is being PAUSED. Please pause in a safe location or find race officials to guide you.

LIGHTNING

Due to lightning, the area must be cleared. Please follow race officials' instructions. Do NOT seek shelter under tall, isolated trees, and stay away from all tall, isolated objects and metal objects, such as fences, poles, and barricades
Due to lightning, [RACE NAME] area must be cleared. Please follow race officials' instructions.

MID-RACE CONDITIONS: CAUTION (YELLOW & RED)
Due to conditions along the course, we ask you to use caution and be alert to road hazards. Use careful judgment if you intend to proceed with the race. Please follow instructions of race officials on responding to worsening conditions
Due to weather, please use caution, be alert to hazards, and follow instructions official personnel

MID-RACE ROAD CONDITIONS: CANCELED (BLACK)
Due to conditions along the course, [RACE NAME] has been CANCELLED. If you are currently on the course, please follow the instructions of race marshals and evacuate to a safe location. Thank you for your cooperation.
Due to weather, [RACE NAME] is being canceled. Please follow race officials' instructions.

EVENT ALERT SYSTEM:

The Event Alert System (EAS) is utilized to advise athletes of potentially dangerous and/or changing conditions. The system utilizes a set of 4 color-coded flags that are positioned at the race venues and along the course as a way to communicate the alert level in real time. The Incident Commander will advise on the color of the flags throughout the day in conjunction with the event Meteorologist and Medical Director.

The recommended placements for EAS flags at the race venue are as follows:

1. Expo / Packet Pickup
2. Transition
3. Swim Start
4. Aid Stations / Medical Stations
5. Finish Line

In order for the EAS to be effective, athletes need to be made aware that the event will be utilizing the flag system. An explanation about the EAS system should be incorporated into pre-event athlete communications to provide athletes with an understanding of the 3 **W**'s:

What is the purpose of the flags?
Where should they look for the flags?
What action should be taken?

DID YOU KNOW?

Platforms to explain EAS to athletes:
Website
Athlete Guide
Email Blasts
Social Media
Pre-Race Briefings (if applicable)
On-Site PA Announcements

EVENT ALERT SYSTEM		
ALERT LEVEL	**EVENT CONDITIONS**	**RECOMMENDED ACTIONS**
Low	Good conditions	Enjoy the event. Be alert
Moderate	Less than ideal conditions	Slow down. Be prepared for worsening conditions
High	Potentially dangerous conditions	Slow down. Consider stopping. Observe course changes and follow official instruction
Extreme	Extreme and dangerous conditions Event canceled	Participation stopped Follow event official instruction

RACE HOTLINE NUMBER

It's best practice for the event to have a race hotline number that is distributed to all staff, volunteers, and participants. The number should be printed on the runner bibs as well as all credentials so it can be referenced while the event is live. This phone line should be routed to the Race Command Center with a designated person assigned to receiving calls, logging incidents, and dispatching the appropriate response.

RACE BIB	CREDENTIAL
	

When it comes to emergency incidents, people are conditioned to call 911, as this is the response we've been taught since childhood. During an event, EMS is staged strategically throughout the course to respond to incidents. In some instances, the Medical Director and EMS reps in the Race Command Center are better equipped to dispatch nearby available resources than the general 911 operator, who may not be aware that the event is happening. Event resources may be able to respond to the incident faster. Additionally, the deployment of new assets to the scene that are not part of the event plan and have not been briefed on road closures, athlete routes, and maneuvering the course safely can introduce another element of risk to the equation. Collaborate with the medical director and local police, fire department, and EMS resources in advance of the event, to determine if emergency incidents should be directed to the race hotline number or directly to 911. Communicate this instruction clearly to all parties in advance of the event.

The race hotline number can be set up as an analog hard landline (generally the most reliable), a dedicated cellular phone(s), or by using Voice Over IP (VoIP) which is a phone service that runs via the internet (examples include Google Voice and Telzio). In the case of VoIPs, the hotline phone number is forwarded to an existing cell phone or landline number.

Pro Tip:

The larger the event, the more important it is for the hotline phone number to be a dedicated landline or cell phone line as opposed to forwarding to a staff member's personal cell phone number. For large events, it's likely multiple phones and operators will be necessary to handle the call volume. The hotline number should be set up with one of the following failsafes:

- *Simultaneous Ringing: If there are multiple physical phones (cell or landlines), the call should ring to all phones, which will continue to ring until someone picks up. Once it is picked up by one of the operators, all other phones cease ringing.*
- *Trunked Ringing: In instances where call forwarding is taking place (VoIP), designate more than one person who is able to receive calls. The phone should be set so that after ringing to the first phone for a certain number of rings/number of seconds, it is automatically transferred to the next number in line. This process continues and calls are forwarded until someone picks up. The call is never dropped.*

COMMUNICATION TECHNOLOGY:

When it comes to communication technology, you should never put all your eggs in one basket. Having multiple ways for personnel to interact can help prevent gaps in information flow during a system failure. This is referred to as redundant communication. Understanding the capabilities of available technology as well as potential limitations and vulnerabilities, can help you to decide which means of communication to use during the event. Below are some commonly used options:

Commercial Radios:

Commercial Radio Equipment Types:

Portable / Handheld Radios: Handheld Radios are the most commonly used event radio and typically have about 3-5 watts of power output. In general, the higher the power, the better the range of the radio.

HANDHELD RADIO

Base Radios: Base Radios or Base Stations as they are sometimes referred, are primarily used for Command Center operations at a stationary location (i.e. tent or building). Base stations will typically be 25-30 watt power output, giving them greater range than portable radios. These stations have an antenna, connected to the station via antenna cable. For optimal coverage, the antenna should be placed outside the tent or building where the Command Center is located. As the primary hub of all your event communications, the last place you want to experience radio issues is at the Command Center. Incorporating a Base Station at your Command Center is an extra security blanket for your event, bolstering radio strength and coverage in Command to decrease risk of information flow interruptions.

BASE STATION

Charging Equipment: Depending on the duration and frequency of use of the radios, personnel may use up the radio's full charge while on-site at the event. Have a plan to charge radios on-site and/or provide spare batteries that can be swapped when necessary. This is particularly important when the event is multiple days and/or radios are also used during load-in and load-out.

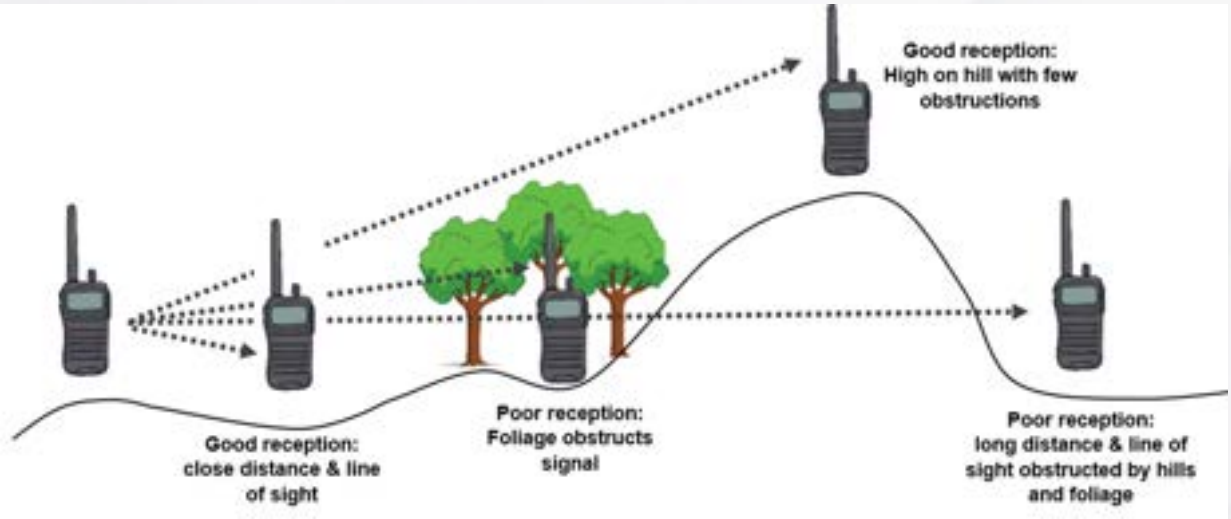
CHARGING STATION	SPARE BATTERIES
	
Position charging station in the staff tent to re-charge radios and/or spare batteries throughout the event. Requires power source.	Order spares that can always be charging at the staff tent. Provide course personnel (or anyone not in close proximity to the tent) a dedicated, charged spare battery to keep with them during the race.

Radio Accessories: When placing your radio order, consider including additional accessories:

RADIO ACCESSORIES				
SPEAKER MICS	**SURVEILLANCE MICS**	**D-RING**	**HEADSETS**	**CHEST PACK**
				
Pros: Move the push to talk from the radio and bring it closer to your mouth and the speaker closer to your ear. _____ **Cons:** Since the transmission plays through the speaker, everyone in the surrounding area will also be able to hear it. Not ideal in quiet settings or if sensitive information is being discussed.	**Pros:** The transmission goes directly from the earpiece to the ear, so communications. Great for discreet or sensitive communications and in quieter areas. _____ **Cons:** Since the earpiece remains fixed within the ear, it can make it harder to hear your surroundings. Users may find the earpieces uncomfortable to wear for extended periods of time. For hygienic reasons, these should not be shared between personnel.	**Pros:** The D-ring fits over the ear, which lends itself to use by multiple users. Since the ring wraps around the ear, it helps to keep it attached to the ear, especially for very active on-site personnel or on-course personnel riding bikes / motorcycles in high winds. _____ **Cons:** Users may find the earpiece uncomfortable to wear for extended periods of time.	**Pros:** Recommended option for personnel in the Command Center. With so many radios present the radio chatter can get loud and often distracting. Issuing headsets to Command personnel helps to keep noise levels down. _____ **Cons:** Headsets can be cumbersome for on-site operations personnel doing a lot of physical activity.	**Pros:** Provides a secure pocket to hold the radio on the chest, as opposed to on the hip. Helpful for very active on-site personnel and on-course personnel riding bikes or frequently getting in/out of vehicles _____ **Cons:** Some users find chestpacks constrictive or feel they get in the way. On high heat days, these also add another layer of fabric which some might find uncomfortable.

Radio Application Types:

Local Radios:
Local or simplex radios involve "radio to radio" communication. This application is recommended for close range communication. There is no definitive distance that local radios are able to transmit. The more watts the radio has, the larger the radius tends to be. The coverage distance is also largely dependent on the terrain of the area. The radius is greater in open areas as opposed to areas with lots of obstructions (i.e. buildings, trees, etc.) as these structures disrupt the direct pathway of radio waves. Prior to the event, the area should be tested with two radios to determine the bounds of the usable range.



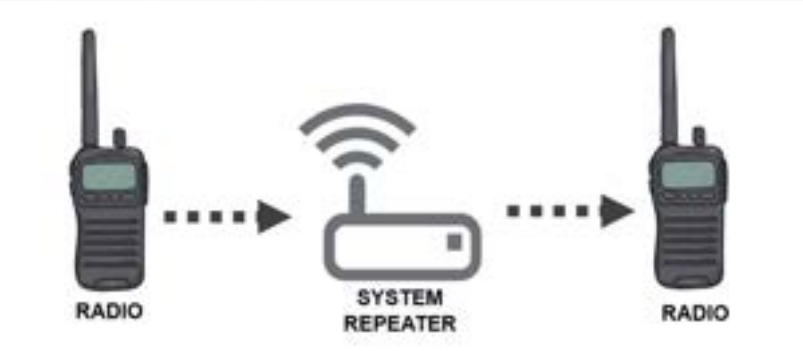
Citywide Radios: The use of these radios is dependent on the existence of a citywide system within your area. The word "system" refers to a network of physical sites containing stationary, high-powered repeaters that transmit radio waves. These sites are strategically placed within a geographic region to allow for uninterrupted transmissions as you move through the coverage area. These repeaters are backed up on batteries to allow the system to still operate during power outages.

Conceptually, citywide radio systems operate under the same principles as a cellular network. For example, when you use your phone, signals are bounced off the nearest cell tower to allow your call to go through. If you move to the other side of town, your next call may utilize a different cell tower. You, as the user, don't know which tower is used (nor do you usually care), as the call experience is seamless. It's only when you are outside the range of all nearby towers that you begin to experience issues. The same principles are true for a citywide radio network.

DID YOU KNOW?

Citywide Radio Systems are typically privately owned and encrypted.
As a result, these radio systems remain intact in the midst of public infrastructure failure.

This is also why there isn't a set definition or structure for what these systems look like in every city. It's possible that a system may not exist in the area where your event is held. In these instances, alternate radio types will need to be used.



Citywide radios are the preferred radio type for events with a larger geographic footprint. The range for radio communications between parties has the potential to be far greater than local radios. Local radios may be sufficient for communications happening at a particular venue, but citywide radios will be the better solution for sharing updates along the course. A few considerations to review with your radio provider:

COVERAGE AREA GAPS

Prior to the event, the radio vendor (and you!) should conduct a course ride with two portable handheld radios to determine if there are any gaps where coverage is non-existent.

In these instances, the radio vendor may be able to provide mobile repeaters in these areas to help boost the signal. Power and WiFi access will be needed to link the mobile repeater to the citywide system.

CONCURRENT CONVERSATIONS

Each system has different capacities when it comes to the number of concurrent conversations it is able to support.

The number of conversations will come into play when determining the optimal number of channels for the radios at your event.

Pro Tip:

It's possible you may look to use a combination of citywide and local radios at your event. Citywide radios are more expensive than local radios. In situations where it is not imperative that all on-site personnel need to know every detail of the happenings along the course or at other sites, a hybrid model might be a way to save money.

In this scenario, site personnel (i.e. transition / start / finish) receive local radios. The area lead receives both citywide and local radios. The area leads are responsible for listening to the citywide radio. If there are updates from other course areas that are relevant to their site staff, they communicate this update to their team on the local radio.

Cellular Radios: Cellular radios operate on a nationwide cell phone network (i.e. T-Mobile, AT&T, etc), utilizing these towers to transmit signals. Similar to citywide radios, the user is able to roam freely through the coverage without interruptions in coverage.

Over the years, races have started to transition to cellular radios because of the following perks:

WIDESPREAD COVERAGE	LOWER COSTS	STANDARDIZED APPLICATION
Cell towers are widespread and may exist in areas where citywide radio systems do not. Because of the prevalence of towers, the coverage area may be larger and there are an unlimited number of talk paths	Cellular radios tend to be less expensive to rent than citywide radios	When using cellular radios, all staff are using the same system as opposed to scenarios where some staff are on local radios and some are on citywide. This simplifies assignment and distribution

However, from a redundancy of communication perspective, cellular radios are not ideal, as your cell phone communications and your radio communications are both dependent on the same system. Here are a few considerations to keep in mind before opting to use cellular radios at your event:

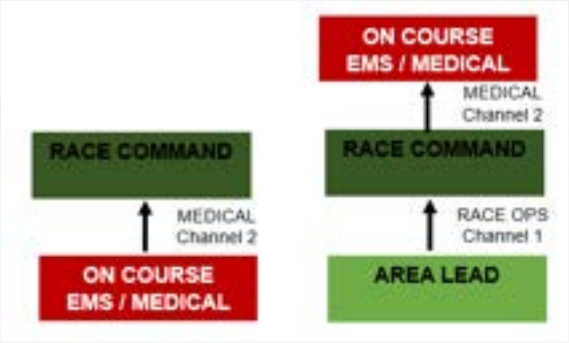
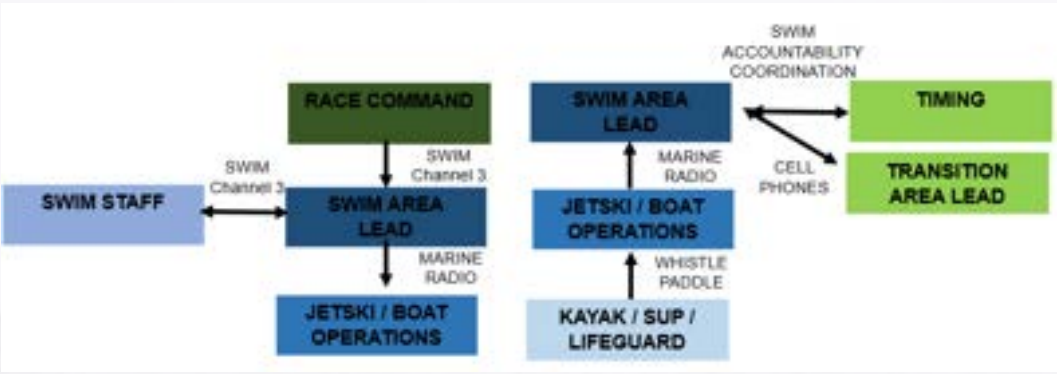
- **At the mercy of cell networks:** Citywide systems which are privately owned by the radio provider, so in the event of malfunction, they have control to be able to troubleshoot and repair the issue. For problems with the cellular network, only the nationwide provider (i.e. AT&T or T-Mobile) will be able to address the issue.
- **Bandwidth limitations:** At large-scale events with lots of attendees using their cell phones to call, text, and/or upload photos to social media, the cell towers are overrun with activity. The air becomes oversaturated with cellular activity and transmissions are not able to successfully get through. Essentially, your event personnel communication will be competing against your event attendee communication. For smaller races this is not typically an issue, but as your projected attendee numbers rise, this should be taken into consideration.
- **Emergency situations:** In the event of a large-scale public safety incident (i.e. terrorist attack, active shooter, etc.) that occurs in the local area where your event is held, the cell traffic in the area will increase. The bandwidth limitations described above become a risk at a time when it's perhaps the most important to be able to communicate action plans with event personnel.

Channels: Once you decide on the radio application type, the next step is creating the channel map for how the radios should be programmed. Most rental radios have a maximum of (16) channels. The purpose of channels is to allow for multiple conversations to occur concurrently. They help to facilitate easy communication between certain subsets of the event. The existence of the channel creates a natural filter where personnel are only hearing transmissions that pertain to their event subset.

The creation of the channel map involves finding the sweet spot where you have enough channels for people to communicate without encountering busy signals, but not too many channels that communications get lost. If using citywide radios, also chat with your radio provider about how many concurrent conversations the system is able to support. The number of channels used should not exceed the number of supported simultaneous conversations.

SAMPLE CHANNEL LIST			
CH #	**FUNCTION**	**ASSIGNMENT**	**NOTES**
COMMERCIAL RADIOS (cellular / citywide / local)			
1	Race Operations*	All Event Staff	*For larger events, consider dividing the bike/run course ops and site ops communications into separate channels
2	Medical	Medical Response	Swim, Bike, Run, Finish Line medical and EMS assets
3	Swim Course	On-Water Assets	The swim should always have a dedicated channel
4	Officials Operation	All Officials	All event officials
5	Open Talk	All Event Staff	Non-operational, non-emergency communications
MARINE RADIOS			
6	Swim Marine Radio	Jet Ski Teams, Swim Area Leads	Used in addition to the Swim Course channel above

Prior to the event, it's important to instruct personnel which radio channels they should use during the event and outline the expectations for the communication flow between channels:

SAMPLE FLOW MAP:	
TYPE	**FLOW**
Event Comms	
Medical Comms	
Swim Comms	

Equipment Distribution & Collection: Prior to the event, create plans for the distribution of radio equipment to ensure the correct people receive all the items necessary to carry out their roles. Establish processes for the check in and check out of items to have an accurate handle on who is in possession of what equipment. Lack of organization around radios can lead to lost or misplaced items, which can have expensive repercussions post-event. Here are some best practices:

- **Designated Distribution & Collection Points:** Designate specific areas where personnel will be able to pick up and drop off equipment. Make sure to communicate this location to all relevant parties in advance of the event and consider having signage on-site to help direct personnel to these spots. Without proper direction, chances increase that personnel will not receive the necessary equipment pre-event and that equipment will not be returned post-event.

- **Designated Radio Manager:** Assign a staff member to be responsible for the distribution and collection of radios. As soon as the final athlete crosses the finish line, there's a tendency for all the focus to shift to breakdown and by the time it shifts to radio collection, it's likely some vendors, volunteers, and staff have already left the site, radio equipment in tow. Someone needs to be responsible for collecting equipment from the onset of load-out until all equipment has been accounted for.

- **Check-in / Check-out Spreadsheet:** Creating a spreadsheet is the easiest, lowest cost way to keep track of radio equipment assigned to staff members, volunteers, and vendors. Every radio should have a barcode sticker from the vendor, an engraved serial number on the side of the radio or a serial number on the back of the unit (under the battery) that should be recorded along with the person's name and contact information. Also be sure to log which accessories (i.e. speaker mics, spare batteries, etc) have been distributed. An editable radio checkout template can be downloaded here.

- **Equipment Scanners:** If the radio vendor places barcodes on each piece of equipment, you can often request to have scanners on-site at all distribution and collection points. Requiring all personnel to scan equipment out and in allows for tracking in real time. This information can also help to inform future ordering as it provides the most accurate snapshot of what equipment was actually used and the amount of equipment that sat untouched.

- **Bulk Group Pick-ups:** Where possible, encourage bulk group equipment pick-ups as opposed to individual pick-ups. Individual pick-ups mean more manpower to distribute, more tracking, and more people to hold accountable for lost equipment. Consider assigning one lead person from each group to pick up their groups radios in bulk. This group leader is responsible for all the management of the equipment given to them

Radio Etiquette: In scenarios where the water temperature is on the bubble in the days leading up to the race, the final race morning reading serves as the official verdict. Athletes will anxiously be awaiting the news about whether they will be able/required to wear a wetsuit. It's important to have communication for all scenarios pre-drafted and cued up prior to race morning. This allows the rollout of information to be fast and efficient. The final water temperature and associated wetsuit messaging should be communicated using the following methods:

RADIO PROCEDURES	
STEP-BY-STEP	**KEY NOTES**
1. Push radio button and wait for the radio tone to chirp	• Anything said prior to the chirp will not be broadcasted.
2. To call someone say "John Doe for Jane Doe" or use the titles "Safety Coordinator for Race Director" *If there is no response on initial contact, check if you are on the right channel and try calling again*	• State the name of person or title you are seeking to contact first, followed by your name/title • This alerts the person you are trying to contact first and foremost, to prevent it being lost in interrupted radio transmissions
3. The person will then say "Go for John Doe" or "Go for Safety Director"	• This indicates they are ready to listen to what you have to say
4. Communicate the issue or question	• Speak succinctly and efficiently. Avoid verbosity and refrain from including extraneous details
5. Wait for the answer or repeat again	• You must release your finger from the radio button after you finish speaking to allow a chance for the person to respond
6. After you receive the answer, say "Over", "Understood' or "Copy"	• This indicates you understand and the conversation can be closed. • Refrain from using 10 codes or other jargon

Marine Radios:

Marine radios are the main form of communication for boats and their ooccupants when they are out on the water. They use public, very high frequency (VHF) FM channels and are intended mainly for short-range communications, generally 5-10 miles. All on-water public safety assets and most private recreational boats are outfitted with marine radios. In the context of triathlon events, it is this universal nature of marine radios that make them a valuable asset for safety communications along the swim course. Using the Marine Radio network allows race management to have a direct line with the U.S. Coast Guard along with any public or private on-water safety assets along the course (i.e. Police, Fire Department, Rescue Divers, etc.).

DID YOU KNOW?

The universal nature of marine radios connects all on-water assets, including those who may not be part of your event.
Reminder: ALL communications broadcasted on marine radios are public.

Anyone in the area with marine radio access will be able to listen in on conversations. Refrain from disclosing any athlete personal information and use discretion to prevent leaks of any confidential information.

At an event, it is standard that mobile race personnel on the water (i.e. swim coordinator, head lifeguard) would have handhelds and base stations would be present within the public safety vessels and also within Race Command. As with commercial radios, antennas are often positioned outside of Command to extend the reach of the base station.

Pro Tip:

When selecting the location for the Race Command Center, ensure it is a close enough distance from the swim course to be within range of the marine ratio communications happening out along the water.

Marine radios have a specific set of frequencies assigned to predetermined channels on the radio by the FCC (Federal Communications Commission). Each channel is designed for a specific type of communication. For reference, here are the channels that are relevant to on-water events:

MARINE RADIO CHANNELS	
CHANNEL	**DESCRIPTION**
16 & 9	**International Distress** - Monitored by the U.S. Coast Guard. USCG may also communicate out safety information on these channels. Refrain from using these channels to relay event-specific information
6	**Intership Safety:** Recommended for swim events to allow for communication between on-water assets.
68, 69, 71, 72	**Non-Commercial Intership:** These channels are also available to the public for recreational intership communication

HAM Radios:

The purpose of the High Wind Action plan is to ensure that the public, personnel, and temporary structures in the event area remain safe during high wind conditions. Event staff should inspect temporary structures periodically during events of long duration. They should post warnings on, or close, a temporary structure whose intended purpose is being violated (i.e. spectator climbing on a platform to get a better vantage point).

Most HAM Radio operators are radio enthusiasts who pursue opportunities to offer their communication expertise as a hobby. Their involvement in events is generally in a volunteer capacity where they take the lead on the coordination of logistics for their HAM Radio group's participation.. In short, HAM Radios can bolster real time, on-site event communication without significant impacts to the bottom line or internal operational resources.

DID YOU KNOW?

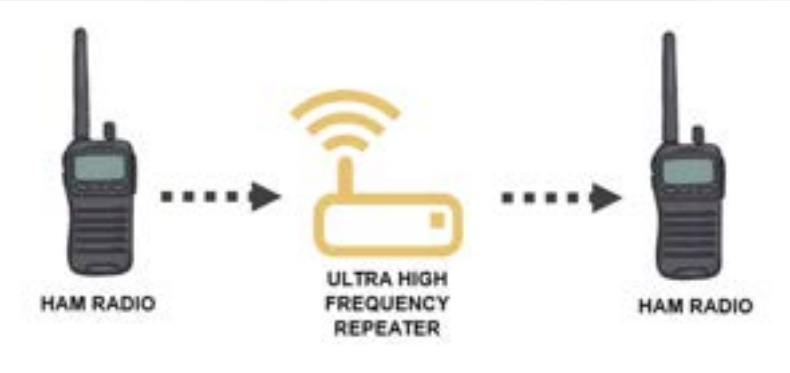
HAM Radio Resources:

ARES (Amateur Radio Emergency Service): Looking to get in touch with a local HAM Radio Group? Search for the closest ARES group in your area and reach out today!

ARRL (American Radio Relay League): The national association for Amateur Radio.

ARRL Repeater Directory: The ARRL publishes an annual list of all repeaters/owners nationwide.

Similar to the world of commercial radios, HAM Radios function by way of strategically placed repeaters, which are personally owned by HAM Radio operators. As part of the preparation for the event, the HAM Radio group lead will typically reach out to these repeater owners to request access to the repeaters during the event hours. Repeaters are linked digitally to be able to extend the radius of the coverage area so HAM Radios ping off the closest repeater. Site visits and course drives should be conducted prior to the event to determine any gaps in coverage which can be troubleshooted with additional antennas and/or sourcing access to additional repeaters. HAM radio equipment is all supported with battery back-up in the event of power outages.



HAM Radio Team Roles: For each event, there is typically a HAM Radio Lead who helps with the recruitment of the following roles:

BEHIND THE SCENES	THE EYES & EARS	COMMAND CENTER REP(S)
HAM Radio volunteers that donate access to their repeater system for the event and ensure it is set to the proper frequency. These volunteers are often "behind the scenes" and not on-site at the event.	HAM Radio operators that are assigned to positions on-site and along the course during the event. They serve as additional eyes and ears to report back issues to Command via the HAM Radio system	Depending on the size of the event, there will be at least one HAM Radio team member that will sit in the Command Center to Liaise between the HAM Radio team and event/agency representatives

The HAM Radio team will look for guidance from the Race Director on the locations where they should position operators as eyes and ears along the course. While there may be some instances where HAM Radio operators are mobile (i.e. along the bike course or to shadow a particular individual like the Race Director), in general, HAM radios should remain stationary at designated locations. Think through the most critical areas along the route where issues might potentially arise and consider assigning a HAM Radio operator to these locations. Suggested areas include:

- Swim Start
- Swim Exit
- Transition
- High Impact locations along the bike (i.e. turnaround points, steep climbs/descents, sharp turns)
- Aid Stations / Medical Stations
- Finish Line

Cell Phones:

Cell phones are the most prevalent and the cheapest communication tools to utilize as most personnel have their own phones that can be used without requiring any rental equipment. The widespread accessibility that makes it the easiest technology to use, also makes it the most unreliable.
Cell phones operate by transmitting signals to the nearest cell tower. Too many cell phones being used at all once by personnel, volunteers, and attendees can saturate the airways preventing signal connections which can render phones ineffective.

One of the greatest benefits of using cell phones over radio is the element of privacy. Conversations held over the radio can be heard by anyone who happens to be on that particular channel making it difficult to control the spread of information. Cell phone calls or text messages establish a direct connection between the caller and the recipient to relay information privately. This is particularly important at events with a lot of media attention where it may be necessary to control the release of certain information.

The group messaging functionality offered by cell phones and messaging apps has created an easy, unobtrusive way for Race Command to provide updates to event personnel in real time. Prior to the event, consider establishing communication groups that link Race Command and staff teams to share information during the event. For example, create one group with Race Command and all staff where Command is able to provide general updates relevant to all personnel (i.e. weather forecast, EAS flag changes, first/last finisher timeline updates). Establish other chains for each of the key area groups (i.e. swim, bike, run, etc) to help create a platform for these teams to communicate amongst themselves. Command has access to be able to reference these conversations, request status updates, and receive real time information from the area groups on the ground.

By using a messaging app as opposed to text messages, this allows there to be centralized transcripts for the communications that take place on event day. The issues, resolutions, and timestamps can be referenced post-event during the recap process to help make adjustments for future years. Here are a few recommended Group Messaging Apps:

GROUP MESSAGING APPS			
PROGRAM	**WEBSITE**	**APP LOGO**	**NOTES**
GroupMe	groupme.com		GroupMe is a popular, free group messaging app. It has a desktop version for Command to easily monitor and toggle between threads via laptops.
WhatsApp	whatsapp.com		WhatsApp is another frequently used, free group messaging app, popular with international communication. It also has a web-based version that can be set up on your laptop by syncing a QR code from your mobile device.
Blerter	blerter.com		Paid service primarily focused on incident response. Contains incident notification communication and group messaging functions
24/7	247software.com		Paid service primarily focused on incident response. Contains incident notification communication and group messaging functions

Satellite Phone:

When it comes to judging whether your event is safe to produce during foggy conditions, there are not measurable thresholds like those that exist for temperature and wind speed. Decisions to delay, modify, or cancel the event as a result of fog conditions are a judgment call based on visibility levels. Consult with your course, safety, and medical personnel to come to a joint decision, keeping in mind the following factors:

Sat phones can also be used to call standard cell phones, though in these situations, the satellite would communicate with the ground-based cell phone tower to connect the call. This necessitates that the cell towers are functional and accessible, which may not always be the case in circumstances when sat phones are being used.

The sat phone hardware and network plans are generally more expensive than standard cell phones. Many local radio vendors will also carry satellite phones that are available to rent for your event.

Pro Tip:
If you're incorporating sat phones into your communications plan, consider having (1) phone that lives in the Command Center with the Incident Commander and (1) phone that stays with the Race Director. This will help facilitate continuity of decision-making in the event of an emergency. Most first responder groups (i.e. police departments, fire departments, EMS, etc.) also have access to satellite phones which will allow race management to maintain ongoing communication with these groups during an incident.

POTS Phone:

POTS (Plain Old Telephone Service) refers to the analog, landline phone service that relies on copper wire phone lines suspended on poles and buried underground. The basic tenets of this phone system remain the same as Alexander Graham Bell's invention back in the 1880's.

POTS lines physically connect you to the person you're calling. This phone service works by establishing a dedicated circuit between Point A and Point B for the duration of a transmission:

- When the recipient's phone number is dialed the phone provider's Central Office establishes a connection between the caller and recipient's phones. The Central Office is the physical location where a call originates and ends.
- Once connected, the audio from the caller is converted from sound waves to electrical signals by the telephone handset. These signals travel throughout the copper wires and are converted back to sound waves on the recipient's end. This process is repeated throughout the conversation between the two parties.

POTS PHONE

Due to their reliance on physical phone lines, POTS lines will continue to operate in the midst of cell tower signal saturation, which makes them a good alternative during large-scale events with lots of attendees. Disruptions in POTS service come with infrastructure damage or issues with the physical phone lines and/or Central Office malfunction.

Pro Tip:
Consider adding POTS phone line(s) in your Command Center for the Emergency Phone Line to help decrease the chances of service issues for this line during the event. The Incident Commander should have access to a POTS phone in the event of an emergency.

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Aftershocks:

When planning your earthquake response actions, it's important to consider the possibility of Aftershocks, which are smaller earthquakes that follow main shocks. They are caused by adjustments of the fault as it settles into a new relaxed state. Like the primary earthquake incidents, aftershocks are also unpredictable and can occur minutes, hours, days, weeks, or even months after the initial earthquake. Be prepared for the worst case scenario where you have to deal with both the earthquake and the aftershock all in the span of your event time frame.

Earthquake Warning:

The ShakeAlert Early Warning System is an available resource that detects significant earthquakes early and oftentimes, before the shaking begins. The alerts don't predict earthquakes, but indicate that shaking is imminent, which can provide you with a heads up to begin preparation. Below is information on how to get ShakeAlert powered messages configured on your mobile devices:

EARTHQUAKE ALERT APPS			
PROVIDER	**APP LOGO**	**STATES**	**NOTES**
Google	n/a	CA, OR, WA	The ShakeAlert Warning System is automatically configured within the Android Operating System for all users located in these states
MyShake		CA, OR, WA	Earthquake notification provides map showing Epicenter of the earthquake with instructions on recommended action
QuakeAlertUSA		CA, OR	QuakeAlert notifications include the following info: • Expected arrival time • Expected intensity • Distance from the EpiCenter • Magnitude • Suggested Safety Measures

Earthquake Action Plan:

Taking steps to properly secure temporary structures prior to the event can help to mitigate earthquake effects. During an earthquake incident, all event attendees and personnel should move away from structures and avoid entering buildings. It's important to identify designed Safety Zones at your event site and along the course where attendees can safely gather out in the open.

EARTHQUAKE ACTION	RESPONSIBLE*	TIME REQ.*
EARTHQUAKE OCCURS PRIOR TO THE EVENT		
Staff to position themselves around the event site and have attendees hold in place. Participants/spectators/staff should NOT go toward any buildings - everyone should remain in the open	All Staff	10 mins
Once the earthquake has passed, the Incident Command will access next steps based on the damage, which may include dispersing crowds	Incident Command	10 mins
EARTHQUAKE OCCURS DURING THE RACE		
If the earthquake is strong enough, Incident Command will notify staff to stop the race and direct athletes off the course	Incident Command	5 mins
Event staff and course marshals will lead runners off the course into the designated Safety Zones	Course Team	20 mins
Event course vehicles and Police Department assets to deploy along the course, ensuring the runners stop and evacuate	Course Team / Agency Support	20 mins
Emergency Support vehicles and/or medical personnel to be dispatched to the Safety Zones.	Medical Team	20 mins
On course communication to runners will be through Police Department / Emergency vehicle loudspeakers, megaphones, and the Event Alert Flag System (EAS)	Course Team / Agency Support	20 mins

*Note: Time requirements and Responsible columns are suggestions. When developing your Lightning Action Plan, assign staff teams to each action and determine the time needed to complete each task based on available staff, resources, and evacuation routes/locations.

CONCLUSION:

Establishing Weather Action thresholds prior to the event, helps to create a framework for decision-making during high stress, high impact situations. Equally as important as the thresholds themselves, is the Incident Command process for decision-making and the communication of next steps to all relevant parties. Effective weather response is achieved when the right people are equipped with the right information at the right times.

The information in this Guide is meant to function as a baseline for generic weather response planning. As a next step, Race Directors should consider weather implications specific to their event environment and outline action protocols based on resources, timelines, and any other factors that may have an impact on response.