A) Notification System Type:

1) The public beach notification system is described as a hybrid system that requires both portable beach safety towers in conjunction with fixed surveillance / communication towers.

2) Equipment exposed to the weather elements shall be designed for marine environments.

3) Software-operated network-based communication systems with wired and wireless access points for control interface. Designated staff shall be able to log in through a web browser and have complete access to the public beach notification system.

4) Audible notification devices shall be capable of providing adequate levels of sound suitable in all directions above ambient beach sound levels.

5) Visual notification devices shall be capable of providing adequate light suitable for all levels of daylight and other natural interferences (rain, etc).

6) System shall be designed to allow for scalability to provide coverage of additional beaches or other areas in the future without replacing existing system equipment.

B) Notification System Base Station (NSBS):

1) Refer to the scope of work and plans for the locations and quantities of NSBS.

2) The Notification System Base Station (NSBS) shall provide a central communication and monitoring system for receiving and transmitting alarms from the network, including but not limited to BST and SCT. Additionally, the NSBS shall provide communications via Internet (over Ethernet/Fiber) and cellular remotely to provide emergency notification to local first responders and park staff offsite.

3) NSBS shall be remotely accessed via a webpage interface to update notification messaging, check status, review alarm logs, etc.

4) NSBS control cabinet shall be designed for wall-mounting. Provide sufficient support for mounting to existing wall as required.

5) NSBS shall be capable of operating on a 120VAC, 20-amp, single-phase power source local to the building where it is scheduled to be installed.

6) NSBS control cabinet shall be UL508a certified.

7) Provide required communication infrastructure to and from the NSBS:

- **1)** Standard 915 MHz wireless communications
- **2)** Ethernet TCP/IP primary communication over hardwiring (Fiber optic).
- **3)** Backup cellular communication.
- **4)** Provide required network switches, radios, cabling, antenna and support for mounting on building exterior for wireless, cellular, and fiber optic networks.

8) The NSBS messaging system shall be capable of the following:

- **1)** Communicating using wired or wireless networks for two-way communications and control of network devices such as BST, SCT, and EAS.
- **2)** Automatically distribute simultaneous and unique messages and the appropriate notification to networked devices such as BST, SCT, and EAS.
- **3)** Automatically trigger Pan-Tilt-Zoom cameras to move to emergency locations.
- **4)** Automatically trigger loudspeaker announcements for emergencies.
- **5)** Allow multiple operators to send messages simultaneously.
- **6)** Grant access for control to another control station if the location in control becomes inoperable and/or the authorized operator at that control station can no longer operate the control station.

7) Send alert messages with an indication of the source of the message which is initiated from the message source.

8) Send alert messages to end users (recipients) via multiple delivery methods including but not limited to the following:

(a) Audio-visual network alerts to desktop or mobile software notifications.

(b) SMS text alerts to mobile phones and pagers.

(c) Radio tones through local radio channels.

(d) Text alerts to email clients.

(e) Alerts to visible appliances.

(f) Audio alerts to phones.

(g) Audio alerts to speakers.

(h) Audio alerts to existing wide-area or building voice and/or other MNS such as EAS.

(i) Network alerts to any other IP-connected devices via standard XML and CAP protocols.

C) Beach Safety Towers (BST):

1) Refer to the scope of work and plans for locations and quantities of BST.

2) BST shall be provided with a semi-portable screw-in BST base designed to provide sufficient anchoring to support the BST in all normal weather and wind conditions for the locale. The base shall be constructed of stainless steel.

3) BST shall be of a minimum height (approximately 15 ft) required to provide adequate functionality of wireless communications and warning systems.

4) BST shall be finished in international orange per the United States Coast Guard (USCG) standard.

5) BST shall be weatherproof as a complete unit with all equipment mounted or installed.

6) BST shall have ample space for mounting public signage and signage for indicating the beach zone/locale that BST serves. All signage shall be contrasting to the BST color.

7) BST shall be constructed to prevent birds from nesting.

8) BST shall provide the following safety functions, integral or attached to the BST:

1) Beach warning lights with the color code sequence to notify the public of the local beach front water conditions. Lights shall automatically adjust for required intensity depending on natural light levels. Lights shall be visible from 5 ft to 400 ft from the station. Lights shall have the capability of automatically strobing or flashing. Lights shall be visible in all directions (360 degrees). Lights shall be UL2017 certified. Color sequence shall be as follows:

(a) Red: High Swimming Hazard

(b) Yellow: Medium Swimming Hazard

(c) Green: Low Swimming Hazard

(d) Purple: Stinging Marine Life Present

(e) Double Red: No Swimming, Water Closed

2) Separately located blue emergency signal ring light to alert staff and first responders in the event the life ring cabinet is opened.

3) Audible speaker(s) to provide safety and emergency notification messages to the public. Speaker system shall be capable of transmitting voice intelligibility

up to 500'. Audio at 400 feet from the BST shall be a minimum of 68 dB but no more than 98dB at 50 feet.

4) Water Rescue - Life Ring Cabinet with integral monitoring switch to indicate that the life ring is in use for rescue operations. The cabinet shall be designed to hold standard USCG 24" life ring and 100 ft rope. When the cabinet is opened, an automatic signal is sent to the system to activate audible and visual notification on the beach and remotely.

5) Solar energy power system shall be mounted integral to the BST to provide electrical power to the lights, speakers and communication equipment. System shall include battery, solar panel (top mounted), wiring, and mounting hardware. The system shall be capable of providing suitable power 24 hours a day.

6) Wireless communications: BST shall be equipped with 915 MHz wireless communications to allow for sending and receiving alerts, stats and alarms to the fixed stations and then to NSBS. Communication shall be designed as an RF mesh system.

D) Surveillance / Communication Towers (SCT):

1) Refer to the scope of work and plans for locations and quantities of SCT.

2) SCT shall be provided with a permanent fixed base designed to provide sufficient anchoring to support the SCT in all normal weather and windy conditions for the locale. The base shall be constructed of stainless steel and capable of mounting in sand, soil, and concrete.

3) SCT shall be of a minimum height (approximately 9 ft) required to provide adequate functionality of wireless communications and surveillance systems.

4) SCT shall be finished in standard emergency blue finish.

5) SCT shall be weatherproof as a complete unit with all equipment mounted or installed.

6) SCT shall be capable of operating on a 120VAC, 20-amp single-phase power source.

7) SCT electronics connected and powered directly by single-phase power source shall be UL62368-1 or equivalent.

8) SCT shall have signage for indicating it as an emergency device. All signage shall be contrasting to the SCT color.

9) SCT shall be constructed to prevent birds from nesting.

10) SCT shall provide the following safety functions, integral or attached to the SCT:

1) Emergency signal blue light to alert staff and first responders in the event the emergency callbox button is pressed. Lights shall be UL2017 certified.

2) Emergency call box design to allow for single button activation of public safety officers to assist in an emergency.

3) Audible paging speaker(s) to provide safety and emergency notification messages to the public. The speaker system shall be capable of transmitting voice intelligibility up to 500'. Audio at 400 feet from the SCT shall be a minimum of 68 dB, but no more than 98dB at 50 feet.

4) Surveillance system: Shall consist of a top mount Pan-Tilt-Zoom weather rated POE camera with 360-degree coverage. Provide all required mounting hardware and mounting arm. All videos shall be in full color and transmitted back to the NSBS via Ethernet/Fiber communications.

E) Emergency Alarm Stations (EAS):

1) Refer to the scope of work and plans for locations and quantities of EAS.

2) The Emergency Alarm Station (EAS) shall provide park staff with a local alarm notification related to the activation of a system alarm.

3) EAS shall consist of a communication control cabinet, wireless antenna, alarm beacon, and a press button.

4) EAS control cabinet shall be designed for wall-mounting. Provide sufficient mounting supports to support the EAS in all normal weather and windy conditions for the locale.

5) EAS shall be capable of operating on a 120VAC, 20-amp, single-phase power source local to the building where it is scheduled to be installed.

6) EAS control cabinet shall be UL508a certified.

7) EAS powered circuits shall conform to NFPA 70, article 725, Class 2 low voltage.

8) EAS shall be equipped with 915 MHz wireless communications to allow for receiving alarms and notifications from the NSBS. Provide required coax cabling, antenna and supports for mounting on building exterior.

9) EAS shall be capable of activating up to 10 alarm beacons. Refer to the contract documents for the required quantity and location of remote mounted alarm beacons.

10) EAS remote alarm beacon shall meet the following requirements:

- **1)** Shall be rated for outdoor marine.
- **2)** Equipped with blue LED beacon light that will flash or strobe upon activation.
- **3)** Provided with cabling to be mounted up to 100 ft from the EAS control cabinet.
- **4)** Provide audible notifications up to 118dB and support up to 30 unique messages.