

BID SPECIFICATIONS FOR (NAME OF ENTITY) COMMUNITY OUTDOOR WARNING SIRENS

(Name of Entity) will be accepting bids for the purchase and installation of three (3) electronic, radio controlled, community outdoor warning sirens.

GENERAL REQUIREMENTS:

1a. Siren #1

Bidders must offer an omni-directional siren design with 360° coverage at all times during activation. The acoustic performance level shall be 127 dB(C) @ 100', with a minimum 70dB(C) perimeter range of 5400 feet in accordance with FEMA guidelines of -10 dB per distance doubled. The system must be designed to provide full coverage of the specified area @ 70 dB(C) minimum, unless otherwise specified. The siren shall use Internally Cooled 400 watt speaker drivers, quantity 8. Speaker drivers must be accessible through access panels. Electronic sirens that use 100 watt speaker drivers will not be accepted. Sirens that fail to meet minimum performance ratings will not be accepted. The electronics control cabinet shall be manufactured from Natural Finish Aluminum and match the size and design of existing sirens, or dimensions of approximately 31" Wide, 10" deep, and 75" tall. 8 amplifiers shall be used to power the speaker drivers. The use of four (4) batteries are required, and must match existing batteries in service; Interstate 31-MHD or AC Delco S2000. Batteries must be accessible with pull-out battery trays for service safety. A single 120 Volt AC temperature compensated battery charger must supply the incoming charge for the sirens. The charger must warm the batteries through increased voltage during cold weather. The use of battery heaters is strictly prohibited. The Radio control for the sirens must be a 4-5watt Two-Way radio with the appropriate antenna, polyphaser for lightning protection and integration for the siren controller. The siren controller must be capable of decoding all current commands for activation and monitoring with the Whelen High-Speed DTMF format in 10 digit, maintain operation history through memory, and providing remote feedback through the Whelen format 10 to 16 digit proprietary encrypted format. The activation commands are available to capable and interested bidders. The remote feedback commands are proprietary and the responsibility of the bidder to obtain. The (Name of Entity or bidder) will install the siren. The Vendor must provide complete advisory services during installation and complete all internal wiring, battery installation, siren programming, head-end programming and commissioning.

1b: Siren #2

Bidders must offer an omni-directional siren design with 360° coverage at all times during activation. The acoustic performance level shall be 126 dB(C) @ 100', with a minimum 70dB(C) perimeter range of 5100 feet in accordance with FEMA guidelines of -10 dB per distance doubled. The system must be designed to provide full coverage of the specified area @ 70 dB(C) minimum, unless otherwise specified. The siren shall use Internally Cooled 400 watt speaker drivers, quantity 7. Speaker drivers must be accessible through access panels. Electronic sirens that use 100 watt speaker drivers will not be accepted. Sirens that fail to meet minimum performance ratings will not be accepted. The electronics control cabinet shall be manufactured from Natural Finish Aluminum and match the size and design of existing sirens, or dimensions of approximately 31" Wide, 10" deep, and 75" tall. 8 amplifiers shall be used to power the speaker drivers. The use of four (4) batteries

are required, and must match existing batteries in service; Interstate 31-MHD or AC Delco S2000. Batteries must be accessible with pull-out battery trays for service safety. A single 120 Volt AC temperature compensated battery charger must supply the incoming charge for the sirens. The charger must warm the batteries through increased voltage during cold weather. The use of battery heaters is strictly prohibited. The Radio control for the sirens must be a 4-5watt Two-Way radio with the appropriate antenna, polyphaser for lightning protection and integration for the siren controller. The siren controller must be capable of decoding all current commands for activation and monitoring with the Whelen High-Speed DTMF format in 10 digit, maintain operation history through memory, and providing remote feedback through the Whelen format 10 to 16 digit proprietary encrypted format. The activation commands are available to capable and interested bidders. The remote feedback commands are proprietary and the responsibility of the bidder to obtain. The (Name of Entity or bidder) will install the siren. The Vendor must provide complete advisory services during installation and complete all internal wiring, battery installation, siren programming, head-end programming and commissioning.

1c: Siren #3

Bidders must offer an omni-directional siren design with 360° coverage at all times during activation. The acoustic performance level shall be 125 dB(C) @ 100', with a minimum 70dB(C) perimeter range of 4800 feet in accordance with FEMA guidelines of -10 dB per distance doubled. The system must be designed to provide full coverage of the specified area @ 70 dB(C) minimum, unless otherwise specified. The siren shall use Internally Cooled 400 watt speaker drivers, quantity 6. Speaker drivers must be accessible through access panels. Electronic sirens that use 100 watt speaker drivers will not be accepted. Sirens that fail to meet minimum performance ratings will not be accepted. The electronics control cabinet shall be manufactured from Natural Finish Aluminum and match the size and design of existing sirens, or dimensions of approximately 31" Wide, 10" deep, and 75" tall. 8 amplifiers shall be used to power the speaker drivers. The use of four (4) batteries are required, and must match existing batteries in service; Interstate 31-MHD or AC Delco S2000. Batteries must be accessible with pull-out battery trays for service safety. A single 120 Volt AC temperature compensated battery charger must supply the incoming charge for the sirens. The charger must warm the batteries through increased voltage during cold weather. The use of battery heaters is strictly prohibited. The Radio control for the sirens must be a 4-5watt Two-Way radio with the appropriate antenna, polyphaser for lightning protection and integration for the siren controller. The siren controller must be capable of decoding all current commands for activation and monitoring with the Whelen High-Speed DTMF format in 10 digit, maintain operation history through memory, and providing remote feedback through the Whelen format 10 to 16 digit proprietary encrypted format. The activation commands are available to capable and interested bidders. The remote feedback commands are proprietary and the responsibility of the bidder to obtain. The (Name of Entity or bidder) will install the siren. The Vendor must provide complete advisory services during installation and complete all internal wiring, battery installation, siren programming, head-end programming and commissioning.

2. The siren system shall be an Electronic Siren System featuring seven (7) warning tones: Wail, Attack, Alert, Hi/Lo, Pulsed Air-horn, Slow Whoop, and Noon Test. Timing duration for each tone shall be selectable, and shall include 30 seconds, 60 seconds, 90 seconds, 3 minutes, or up to five (5) minutes. The pitch of the "Alert" tone must be 565hz, and the other tones must exactly match the other sirens in (**Service or add Voice Messages to this form**). To prevent confusion, this is an absolute requirement. Sirens with different pitches, different timing or different tones will absolutely not be accepted. In addition, the siren must have pre-recorded voice messages as well. The voice message must match exactly what the (**Name of Entity or list messages**) has currently in service. Message volume, clarity, duration, and pitch must be identical to the existing messages. Messages must be pre-loaded onto each individual siren. Failure to match existing tones or voice messages will be cause for rejection.

3. The siren assembly and mounting bracket shall weigh no more than 550 lbs maximum atop the pole, and shall be able to sustain and operate in winds up to 100 mph. The siren head will have absolutely no internal or external moving parts. Sound MUST be produced electronically through speakers.

4. The siren system shall consist of a pole top mounted speaker cluster, and a two (2) compartment siren case assembly. The battery compartment must be completely separated from the electronics compartment. Batteries are required to be placed on pull-out battery trays for service and to prevent terminals from shorting to cabinet ground.

5. The speaker cluster assembly shall be equipped with 400 watt speaker drivers and not less than 50ft of speaker cable. Speaker cable must be factory cut and not be spliced in any way. It shall be designed to project uniform acoustic output throughout 360°, ± 1 dB, out and away from the speaker in a vertical dispersion pattern, thus minimizing potentially environmentally hazardous ultrasonic signals in the area adjacent to the pole location. Peak output of the siren must be able to converge at one point at the 100 ft reference distance. The speaker assembly shall be fabricated from composite material, thus requiring no maintenance painting. If the bidder proposes a siren different than **the current** Whelen WPS-2900 models, a third party confirmation of the required output, pitches, coverage and tones in Real-World Environments is required.

6. The siren case assembly, or electronics cabinet, shall consist of a two (2) compartment, natural finish aluminum housing, and shall not require maintenance painting. The upper compartment shall contain all of the necessary electronic assemblies for control and operation of the system; the lower compartment houses the batteries for the system. The siren controller must be water and moisture resistant.

7. Each siren shall operate on a 24 VDC power supply system provided by two (4) 12 volt, deep cycle, DC batteries wired in series. The battery system shall be maintained by a temperature compensated battery charger operating from a solar power source for (**List Locations and incoming power required at each location**). The solar power source must be no less than 160 watts of combined solar panel power.

8. In the event of incoming power loss, each siren shall be capable of at least twenty (20) minutes of continuous operation, or several days of intermittent use of brief siren signals before recharging of the batteries is necessary. For the AC powered

sirens, an standard receptacle outlet must be installed inside the cabinet.

9. All sirens shall be controlled and activated by radio, utilizing DTMF encoding controls. Two-way radio communication between each siren and Base Stations shall include all siren functions from each control unit. The radio receiver encoder/decoder unit in the siren enclosure shall be compatible with and interface to the (Name of Entity's) existing base station radio and encoder (or existing siren systems). Diagnostic reporting features must be included and identical to the sirens that are currently in service in (Name of Entity).

10. Vendor will provide complete turn-key services to the (Name of Entity) for Head-End integration. Complete wiring diagrams, schematics, and operational and installation instructions shall be provided within 30 days of project completion.

11. Class II, 55-60 ft. Wooden poles will be used for mounting each siren and control equipment. Poles, installation hardware, and heavy equipment for installation will be provided.

12. All bids shall include shipping freight charge;

Ship to:

(Name of Entity)

CO Public Safety Director

13. All bids shall include costs for startup and operational system training. Each competing bidder must provide sound mapping for the respective siren site.

14. Vendor shall deliver all sirens within (120) days of bid acceptance. Complete installation and verifiable compatible operation of all sirens will be completed within (45) days of siren delivery.

15. The seller must warrant the siren equipment from the date of installation for a period of not less than two (2) years for defects in components and parts, and for an additional period of three (3) years for no more than \$75.00 per module deductible. Batteries may be excluded from this warranty.

16. The (Name of Entity) will accept Industry Standard equivalents. Any deviations must be presented to the (Name of Entity) as a Request for Approved Equal (RAP), and must fully explained in writing to the Contracting Officer of the (Name of Entity). If a manufacturer chooses not to produce equipment with the minimum above specifications, the (Name of Entity) shall in no way be held liable for rejection of the proposal.

INTENT

These specifications are not intended to include any proprietary items, components, circuits, or devices which would preclude any outdoor siren manufacturer from producing equipment to meet these specifications. All ratings, power outputs, and specific criteria are currently being met by commercially available equipment. The fact that a manufacturer chooses not to (or perhaps is unable to) produce equipment to meet these specifications, providing the above criteria are met, will not be

sufficient cause to adjudge these specifications as restrictive.

EXCEPTIONS TO INDUSTRY STANDARD EQUIVALENTS:

1. 100 Watt Compression Drivers will not be accepted as an approved equal.
2. Painted steel cabinets to house the siren electronics will not be accepted as an approved equal.
3. Siren head assemblies fabricated from any material other than corrosion resistant composition material will not be accepted as an approved equal.
4. Any primary power source other than 160 watt or greater Solar Power or 120vAC power will not be accepted as an approved equal.
5. Any encoding/decoding system other than two-way DTMF signaling will not be accepted as an approved equal. Radios must be narrow band compatible with no programming to change between Receive and transmit.
6. The Sound Pressure Level (SPL) within the designated boundary shall be 70 dB(C) minimum, in conformance with FEMA's -10 dB per distance doubled path model, in accordance with FEMA publication CPG 1-17. A distance "halved" scheme will not be accepted.
7. To ensure system uniformity for operators, it is very important that voice messages be exactly what the (Name of Entity) currently has in **service or is requesting**. Any difference in format, duration, wording, pitch, or timing is unacceptable and cause for immediate rejection of proposal.

OPTIONS:

1. Bidder shall provide the following types of installation options:

a) **OPTION 1:** This shall be a **Turnkey installation**. All work shall be done by the bidder and/or under the supervision of the bidder. Bidder shall furnish all labor, materials, accessories, and services necessary to perform all the work in a professional manner as per the manufacturer's specifications, where applicable, and as set forth in these specifications. All work shall comply with all local, state, and federal codes having jurisdiction as well as the regulations of the area utility companies whose service is to be used. All costs are inclusive, no additional costs will be considered without an approved change order.

b) **OPTION 2:** This shall be a **Non-Turnkey installation** with the following provisions: The (Name of Entity) will furnish the poles at no cost to the bidder, and will bear the cost of handling and setting all poles. The (Name of Entity) shall furnish all other labor, materials, accessories, and services necessary to perform all the work in a professional manner as per the manufacturer's specifications, where applicable, and as set forth in these specifications. The bidder shall be required to be on-site immediately after installation to connect all wiring, complete all programming and setup and initialize the siren(s). Under no conditions will "system down time" be acceptable. All work shall comply with all local, state, and federal codes having jurisdiction as well as the regulations of the area utility companies whose service is to be used. All costs are inclusive, no additional costs will be considered without an approved change order.

2. The Bidder must have a **24 to 48 hour** response time for maintenance service and no more than three (3) days response time for replacement parts.

ADVERTISEMENT FOR BIDS

The (Name of Entity) is accepting bids for the purchase and installation of (Quantity-Three) electronic, radio controlled, community outdoor warning sirens. Specifications may be obtained from (Name of Entity) at (Location), or by calling (put in phone #, and/or Fax Request), Monday through Friday between the hours of 8:00 a.m. and 4:30 p.m. "Community Outdoor Warning Sirens" shall appear on the envelope. Bids will be accepted until 4:00 p.m. on (put in date) The (Name of Entity) reserves the right to waive all bids.

(Name), Emergency Management Director

Bid Cost Form:

Siren #1:

Siren Make & Model _____ Price _____

Radio Transceiver (VHF) Price _____

AC Charger Price _____

Optional Item #1 Price _____

Batteries (qty 4) Type _____ Price _____

Installation (turnkey) Price _____

Installation (non-turkey) Price _____

Siren #2:

Siren Make & Model _____ Price _____

Radio Transceiver (VHF) Price _____

AC Charger Price _____

Optional Item #1 Price _____

Batteries (qty 4) Type _____ Price _____

Installation (turnkey) Price _____

Installation (non-turkey) Price _____

Siren #3:

Siren Make & Model _____ Price _____

Radio Transceiver (VHF) Price _____

AC Charger Price _____

Batteries (qty 4) Type _____ Price _____

Installation (turnkey) Price _____

Installation (non-turkey) Price _____

System Costs:

Shipping Price _____

System Integration Price _____

Administration, per diem & other costs (not to exceed NTE) Price _____

(Trade-In of existing sirens or additional discounts) Price _____

Total: \$ _____

Bidder Evaluations: (_____ Name of bidder _____)

Requirement(a): Siren #1 (_____ Type of Siren _____)

Requirement(b): Siren #2 (_____ Type of Siren _____)

Requirement(c): Siren #3 (_____ Type of Siren _____)

- | | | |
|--|------------------------------|-----------------------------|
| #1a: 127dBc rated siren @ 100ft | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #1b: 126dBc rated siren @ 100ft | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #1c: 125dBc rated siren @ 100ft | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #2a: 8 Speaker Cells | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #2b: 7 speaker Cells | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #2c: 6 speaker Cells | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #3a: 5400ft of 70dB coverage | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #3b: 5100ft of 70dB coverage | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #3c: 4800ft of 70dB coverage | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #4: Omni-Directional | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #5: 400 Speaker drivers | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #6: Speaker Access panels | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #7: Cabinet Manufactured with Aluminum | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #8: Cabinet Dimensions 31w"x10d"x75h" | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #9a: 8 Amplifiers | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #9b: 7 Amplifiers | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #9c: 6 Amplifiers | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #10: 4 Interstate or AC Delco Batteries | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #11: Battery pull-out trays | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #12a: 120VAC Temp. Compensated Charger | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #12b: 120VAC Temp. Compensated Charger | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #12c: 160+ Watt Solar Panel | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #13: 4-5Watt Transceiver Radio w/ all equipment | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #14: High-Speed Decoding | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #15: Match all existing activation formats | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #16: Siren controller store history | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #17: Remote feedback match existing | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #18a: Optional Item #1 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #18b: Optional Item #1 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #19: Vendor assistance during installation | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #20: Projected system down-time more than 24 hrs | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #21: 5 Year top to bottom on-site warranty | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| #22: Complete Verifiable match to current system | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Proposal Meets All Necessary Criteria? Yes No