



Request For Bid (RFB)

Boone County Purchasing
601 E. Walnut, Room 209
Columbia, MO 65201

Heather Turner, Buyer
573/886-4392 - FAX 573/886-4390
Email: hturner@boonecountymo.org

Bid Data

Bid Number: **19-22MAR05**
Commodity Title: **Law Enforcement Radar Units**

DIRECT BID FORMAT OR SUBMISSION QUESTIONS TO THE PURCHASING DEPARTMENT

Bid Submission Address and Deadline

Day / Date: **TUESDAY, MARCH 22, 2005**
Time: **1:25 pm (Bids received after this time will be returned unopened)**
Location / Mail Address: **Boone County Purchasing Department
Boone County Johnson Building
601 E. Walnut, Room 209
Columbia, MO 65201**

Directions: The Johnson Building is located on the Northeast corner at 6th St. and Walnut St. Enter the building from the East Side. Wheel chair accessible entrance is available on the West side of the building.

Bid Opening

Day / Date: **TUESDAY, MARCH 22, 2005**
Time: **1:30 pm**
Location / Address: **Boone County Johnson Building Conference Room
601 E. Walnut, Room 213
Columbia, MO 65201**

Bid Contents

- 1.0: Introduction and General Terms and Conditions of Bidding**
- 2.0: Primary Specifications**
- 3.0: Response Presentation and Review**
- 4.0: Response Form
Standard Terms and Conditions
"No Bid" Form**

1. Introduction and General Conditions of Bidding

- 1.1. **INVITATION** - The County of Boone, through its Purchasing Department, invites responses, which offer to provide the goods and/or services identified on the title page, and described in greater detail in Section 2.
- 1.2. **DEFINITIONS**
 - 1.2.1. **County** - This term refers to the County of Boone, a duly organized public entity. It may also be used as a pronoun for various subsets of the County organization, including, as the context will indicate:
Purchasing - The Purchasing Department, including its Purchasing Director and staff.
Department/s or Office/s - The County Department/s or Office/s for which this Bid is prepared, and which will be the end user/s of the goods and/or services sought.
Designee - The County employee/s assigned as your primary contact/s for interaction regarding Contract performance.
 - 1.2.2. **Bidder / Contractor / Supplier** - These terms refer generally to businesses having some sort of relationship to or with us. The term may apply differently to different classes of entities, as the context will indicate.
Bidder - Any business entity submitting a response to this Bid. Suppliers, which may be invited to respond, or which express interest in this bid, but which do not submit a response, have no obligations with respect to the bid requirements.
Contractor - The Bidder whose response to this bid is found by Purchasing to meet the best interests of the County. The Contractor will be selected for award, and will enter into a Contract for provision of the goods and/or services described in the Bid.
Supplier - All business/s entities which may provide the subject goods and/or services.
 - 1.2.3. **Bid** - This entire document, including attachments. A Bid may be used to solicit various kinds of information. The kind of information this Bid seeks is indicated by the title appearing at the top of the first page. An "Invitation For Bid" is used when the need is well defined. An "Invitation For Proposal" is used when the County will consider solutions, which may vary significantly from each other or from the County's initial expectations.
 - 1.2.4. **Response** - The written, sealed document submitted according to the Bid instructions.
- 1.3. **BID CLARIFICATION** - Questions regarding this Bid should be directed in writing, preferably by fax, to the Purchasing Department. Answers, citing the question asked but not identifying the questioner, will be distributed simultaneously to all known prospective Bidders. Note: written requirements in the Bid or its Amendments are binding, but any oral communications between County and Bidder are not.
 - 1.3.1. **Bidder Responsibility** - The Bidder is expected to be thoroughly familiar with all specifications and requirements of this Bid. Bidders failure or omission to examine any relevant form, article, site or document will not relieve them from any obligation regarding this Bid. By submitting a Response, Bidder is presumed to concur with all terms, conditions and specifications of this Bid.
 - 1.3.2. **Bid Amendment** - If it becomes evident that this Bid must be amended, the Purchasing Department will issue a formal written Amendment to all known prospective Bidders. If necessary, a new due date will be established.
- 1.4. **AWARD** - Award will be made to the Bidder(s) whose offer(s) provide the greatest value to the County from the standpoint of suitability to purpose, quality, service, previous experience, price, lifecycle cost, ability to deliver, or for any other reason deemed by Purchasing to be in the best interest of the County. Thus, the result will not be determined by price alone. The County will be seeking the least costly outcome that meets the County needs as interpreted by the County.
- 1.5. **CONTRACT EXECUTION** - This Bid and the Contractor's Response will be made part of any resultant Contract and will be incorporated in the Contract as set forth, verbatim.
 - 1.5.1. **Precedence** - In the event of contradictions or conflicts between the provisions of the documents comprising this Contract, they will be resolved by giving precedence in the following order:
 - 1) the provisions of the Contract (as it may be amended);
 - 2) the provisions of the Bid;
 - 3) the provisions of the Bidder's Response.
- 1.6. **COMPLIANCE WITH STANDARD TERMS AND CONDITIONS** - Bidder agrees to be bound by the County's standard "boilerplate" terms and conditions for Contracts, a sample of which is attached to this Bid.

2. Primary Specifications

- 2.1. **ITEMS TO BE PROVIDED** – Boone County, hereafter referred to as “County”, proposes to contract with an individual(s) or organization(s), hereinafter referred to as “Contractor” for a contract for the furnishing of new Battery Operated Moving/Stationary Radar Units as detailed in the following specifications.
- 2.2. **SYSTEM REQUIREMENTS**
- 2.2.1. The radar shall be a single-piece design, consisting of the antenna, display and counting circuitry. It shall be capable of providing speeds of the patrol and target vehicles approaching the patrol vehicle from the opposite direction as well as target vehicles traveling in the same direction as the patrol vehicle.
- 2.2.2. All components, circuits and parts shall have been thoroughly inspected and tested before and after assembly of the radar unit.
- 2.2.3. The radar system shall operate within its specifications at ambient temperatures from -22°F to +140°F (-30°C to +60°C).
- 2.2.4. The radar system shall meet all requirements of the NHTSA “Model Minimum Performance Specification for Police Traffic Radar Devices”, and shall be listed on the IACP Consumer Products List (CPL).
- 2.2.5. The system shall operate from a power supply voltage of 10.8 – 16.5 VDC, negative ground, or internal battery located in the removable handle (stationary mode only). Maximum current drain on the vehicle’s electrical system shall not exceed 0.8 amperes.
- 2.2.6. The radar system shall be designed to operate on the FCC approved frequency of K_a-Band 33.4-36.0 GHz.
- 2.2.7. The radar system shall incorporate an automatic self-test feature, which verifies the operation of the system upon power-up, and at intervals of no longer than five (5) minutes as long as the system is powered up.
- 2.2.8. All switches used on the radar system shall be push button elastomeric with tactile feedback. Membrane switches incorporated into the front panel overlay or the remote control shall not be acceptable.
- 2.2.9. The speed processing circuitry of the radar system shall utilize digital signal processing (DSP) techniques that convert the antenna’s Doppler signal returns into digital data, perform a frequency domain spectral analysis of all such signals, store in memory the spectral frequency components of interest, and present to the operator the appropriate vehicle speed depending upon the desired mode of operation. The system shall also employ DSP algorithms to reduce the undesirable effects of fan and blower noise interference.
- 2.2.10. All displays and indicators used on the radar system shall be LCD (Liquid Crystal Display), active matrix type, which will be backlit at operator command.
- 2.2.11. The radar system shall have an adjustable range control allowing the operator to select the distance at which targets will be detected; the range control shall have six discrete steps based on the signal-to-noise ratio of the reflected signal received by the antenna.
- 2.2.12. The radar system shall be capable of accurately determining target vehicle speeds while operating in either the stationary or moving mode. The radar system shall process and display speeds with an accuracy of ±1 mph in the stationary mode and +1/-2 mph in the moving mode.
- 2.2.13. The antenna and all electronics shall be enclosed in a metal housing which has a removable handle and end caps. The dimensions of the housing shall be approximately 3.56” high by 3” wide by 7.25” long, with a maximum weight of approximately 1 pound 12 ounces. The handle, including battery, shall be approximately 5.75” high by 2.17” wide by 3.61” deep, with a total weight of approximately 13 ounces. The unit shall have a mounting module for operating in the moving mode.
- 2.2.14. The radar system shall provide visual indication of radio frequency interference (RFI), low battery or supply voltage, and internal circuit error conditions. No vehicle speeds may be processed while any such conditions exist.
- 2.2.15. The radar system shall provide an audible output of the Doppler signal corresponding to the target vehicle speed. The audio volume level shall be adjustable in five (5) steps, with an audio off position, 0-5. The speaker for the audio presentation shall provide information to the operator of interferences, multiple vehicle targets and approximate speed of the intended target. Radar units that use synthesized audio are not acceptable.
- 2.2.16. A trigger switch shall be provided (stationary mode) which allows the operator to inhibit the RF transmission from the antenna, circumventing radar detectors. A visual indication shall be provided while in the “hold” mode. In the moving mode, a handheld wired or wireless remote control shall be provided to activate the “hold” feature.
- 2.2.17. The radar system shall incorporate a “fastest vehicle” feature, which allows the operator to selectively monitor the speed of the fastest vehicle within the antenna beam, rather than the strongest signal return present, and a visual indication shall be provided while this “fastest vehicle” function is active. The “fastest vehicle” mode shall be selectable in function as a momentary function (push and hold) or capable of toggle on/toggle off operation. Units that allow the “fastest vehicle” function to be activated toggle on/off only are not acceptable.

- 2.2.18. The radar unit shall have, as an option, a connector at the base of the handle, which, when connected to a PC and appropriate optional software, allows speed and unit functions to be displayed and recorded. It shall also provide an input from the vehicle's speedometer through either the handle or a docking module. This speed input shall be used to direct the Digital Signal Processing (DSP) computer to search for the Doppler patrol speed signal in a specific speed range. The counting unit shall not display the speedometer input as patrol speed.

The unit shall also have DSP based software that will "learn" the operator's driving speeds by using the HOLD feature. Radar units that do not offer both methods of patrol speed search are not acceptable.

- 2.2.19. A "patrol speed blank" switch shall be provided on the remote control, allowing the operator to selectively suppress or display the patrol speed-reading while the unit is in the locked condition.
- 2.2.20. The counting unit shall display, upon command, the software revision of both the control microprocessor and the Digital Signal Processor.
- 2.2.21. The radar system shall have, with the handle removed, a docking module, which allows the unit to operate in the moving mode. This docking module also allows connections to power, +12 VDC, speedometer input and optional RS-232 port. . The input from the vehicle's speedometer shall be used to direct the Digital Signal Processing computer to search for the Doppler patrol speed signal in a specific speed range. The counting unit shall not display the speedometer input as patrol speed.
- 2.2.22. The radar system shall have the ability to operate, in the moving mode, with the handle "on". When placed in the dash-mounting bracket, the unit will be allowed to operate either as a moving or stationary radar. When the unit is in the moving mode of operation and the operator picks up the unit from the dash bracket, the unit must automatically switch from moving mode to stationary mode and be trigger operated only. When placed back on the dash bracket, the unit must automatically switch back to the moving mode, if it were in the moving mode before being removed.
- 2.2.23. The radar unit shall have a menu function that allows the operator to select various operating functions. These functions shall include:
- A. MPH (English) or km/h (metric) operation
 - B. 0 or 5 second continued tracking history after lock
 - C. Toggle on/off or push-and-hold fastest function
 - D. Various video output formats

2.3. OPERATING REQUIREMENTS

- 2.3.1. The system shall be capable of measuring the actual Doppler input signals from the antenna and converting those signals into the speeds of the target vehicle and patrol vehicle.
- 2.3.2. The system shall be designed for easy programming of the speed readings in either English (mph) or metric (km/h) measurement systems; such conversion shall be menu selectable and can be performed by the operator. Units that require a technician to change from mph to km/h are not acceptable.
- 2.3.3. The system shall have three, 3-digit, seven-segment, numeric displays. These displays shall be on an active matrix, backlit LCD (Liquid Crystal Display). The backlighting shall have a light pipe weave, using a single LED for illumination. The target tracking display shall be 0.4" in height and the "fastest vehicle"/lock display and patrol display shall be 0.3" in height.
- 2.3.4. The system display shall also have indicators that display the selection of "same direction" and "fastest vehicle" modes, indicate when the unit is in the "hold" mode, presence of RF interference (RFI), low voltage conditions, and internal detected errors.
- 2.3.5. While in the moving mode, opposite direction, the unit shall process and display closing speeds of 210 mph. The unit shall continuously track and display both the patrol and target vehicle speeds after lock has been activated. The locked target speed will be displayed in the lock window. After the patrol speed has dropped 10 mph below the locked patrol speed, the patrol speed display will flash the patrol speed at the time of lock.
- 2.3.6. The system shall accept the function of the trigger, which allows the operator to activate the transmitter by pulling the trigger, and turn the transmitter off by releasing the trigger, which also locks a valid displayed speed. In the moving mode, a handheld remote control shall operate the "hold" and lock features.
- 2.3.7. **Speed Range Requirements**
- 2.3.7.1. Stationary Mode: 10 to 210 mph.
- 2.3.7.2. Opposite Direction Moving Mode: Patrol speed 10 to 99 mph, to 40 to 99 mph. These patrol speed ranges must be remote control programmable and be performed by the operator. Target speed of 10 to 210, subject to a maximum closing rate limitation of 210 mph.

- 2.3.7.3. Same Direction Moving Mode: With patrol speeds from 10 to 99 mph, the system shall display speeds of target vehicle traveling in the same direction at a higher or lower speed (to the front) than the patrol vehicle. Speed differential between the patrol and target vehicles (for a target speed acquisition) shall be in the range of 3 mph to a maximum of patrol speed minus 5 mph.
- 2.3.8. The system shall initiate an automatic internal test upon power-up of the unit and at least every five (5) minutes that the system has power applied. Whenever a target speed is locked, an automatic internal test is performed. If this test should fail, no speed displays will be allowed.
- 2.3.9. The unit shall contain the following controls:
- TEST - activates the internal lamp and accuracy tests.
 - MODE - changes between stationary or moving modes.
 - AUDIO - selects audio to be increased, decreased or unscelched. Secondary function is the down arrow (decrement).
 - RANGE - selects range to be increased or decreased. Allows operator to select appropriate target range. Secondary function is the up arrow (increase).
 - POWER - used to turn power on or off to the unit.
- 2.3.10. The system shall be equipped with a TEST button, which, when activated by the operator, performs the following in sequence:
- Display of the number 888 in all numeric display windows.
 - Activation of all indicators.
- Display of the number 32 in the target display window (stationary mode), and 32 in both the target and patrol display windows in the moving mode, to verify the internal counting circuitry is functioning correctly.
- 2.3.11. The system shall be equipped with two (2) independent quartz crystal time base circuits. One crystal shall be used to operate the DSP circuitry and the other crystal used to control the main operating microprocessor. These two crystals shall be crosschecked during the internal test and at least every five (5) minutes that the system has power applied. If an error in frequency is detected, "ERR" shall be indicated and all speed-readings blanked.
- 2.3.12. The system shall include an adjustable audio circuit that amplifies the Doppler signal so an audio tone of the speed of the target vehicle may be heard. The audio signal shall be present at all times while the target vehicle is within the radar beam, and should be squelched when no target is being displayed. The radar device shall permit the operator to inhibit the squelch action to keep the receiver open so the operator may determine the ambient interference conditions. The audio tones produced under normal operating conditions shall be within the normal audio range (200 to 3,000 Hertz).
- 2.3.13. The system must be equipped with a low voltage alert and low voltage warning circuit and indicator. If the power supply, either internal battery handle or external power falls below a preset minimum, the "BATT" indicator shall flash and a short audio alert tone shall be heard through the speaker, alerting the operator that the internal battery voltage has approximately 15 minutes of useful power, or the external power supply is low. This alert message shall repeat every two (2) minutes. If the voltage continues to drop to the minimum operating level, the "BATT" indicator shall remain on and a short alert tone heard, alerting the operator, and no further speed readings can be taken. Locked speeds shall remain.
- 2.3.14. The system must be equipped with a radio frequency interference (RFI) detector, which visually indicates "RFI", when an excessive extraneous radio frequency fields are present. No speeds shall be displayed or locked while this condition exists. A previously locked speed shall be maintained and displayed after the condition no longer exists.
- 2.3.15. The system must be equipped with a means to visually indicate the system is in the RF hold mode by displaying "HOLD".
- 2.3.16. The removable corded handle shall have power cord approximately 5 ½' in length, with a completely flexible polypropylene jacket impervious to deterioration by oil and exposure to sunlight. It shall be approximately 3/16" in diameter, terminated on one end by a rugged heavy-duty male plug compatible with a conventional cigarette lighter receptacle of a vehicle. The male connector plug shall be made of a rugged break-resistant material. It shall have heavy, corrosion-resistant spring-action electrical contacts. The end of the cigarette plug shall be removable and contain a 2-amp SLO-BLO fuse.
- 2.3.17. The unit shall have an optional docking module for mounting the unit in the moving mode of operation. The docking module shall mate with the unit and provide various secure mounts for different types of patrol vehicles. It shall also provide connections for a handheld remote control device, speedometer input, optional RS-232 and power connection.

- 2.3.18. The system must be able to accept an optional battery handle unit. This handle must have a connector on the bottom of the handle that will allow a 115 VAC/60 Hz charger to plug into the handle and recharge the battery. The battery shall be a Nickel-Metal Hydride type and contain a temperature-monitoring device in the battery pack, which will function with either charger to prevent overcharging.
- 2.3.19. The system shall have, as an option, an RS-232 I/O data port located on the bottom of the handle. This will allow the unit to communicate with other external devices such as an in-car video system or, with optional software, statistical data on a PC or Palmtop computer.
- 2.3.20. The system shall have a "fastest vehicle" function, controlled by the operator using the trigger, stationary mode, or handheld remote control, moving mode. In the stationary mode, when the trigger is depressed, obtaining a target speed, then released and depressed a second time within ¼ second the unit will be placed in the fastest mode. A "FAST" indicator shall light, indicating the "fastest vehicle" mode has been selected. The system will display the speed of the fastest vehicle, in the antenna's beam, in the fast/lock display window, while tracking the strongest return signal vehicle speed in the target display window.

When the operator releases the trigger, the system shall lock the fastest vehicle in the lock display window, and continue to track the "fastest vehicle" in the tracking window, for a period of five (5) seconds. The microwave transmitter shall automatically turn off at the end of the five seconds, or whenever the signal is lost, which ever is shorter.

In the moving mode, the operator depresses and holds the "fast" switch on the handheld remote control. The "FAST" indicator shall light indicating the fastest vehicle mode has been selected. The system will display the speed of the fastest vehicle and the strongest return signal as indicated above. When released, the unit shall remain in the "fastest vehicle" mode for approximately 2 seconds, then continue with normal operation.

- 2.3.21. The unit shall be capable of locking the fastest speed. If the handheld remote control's Lock/Release switch is depressed when a fastest vehicle is displayed, the locked speed will be displayed in the Fast/Lock window and the "FAST" indicator will flash, indicating the vehicle, at the time of lock was the fastest, not the strongest return signal. The counting unit must remain in the "fastest vehicle" mode and continue to display vehicle speeds until the locked speed is cleared.
- 2.3.22. In the handheld stationary mode, the system shall allow the operator to track or lock and track target vehicles, by depressing the trigger and upon release of the trigger, the target speed shall be locked in the lock display window. The system shall continue to track the target vehicle, displaying the speed in the target display window for a period of five (5) seconds, or until the signal is lost, which ever is shorter.

When mounting on the docking module, the unit shall allow complete tracking or lock and tracking of the target and/or target and patrol speeds. The speed(s) are locked by depressing the Lock/Release switch on the handheld remote control. The locked target speed will be displayed in the "LOCK" window. The patrol and target tracking windows will continue to display active speeds until the target signal is lost or the patrol speed drops 10 mph below the "locked" speed. The patrol speed will then flash the locked patrol speed at the time of lock.

- 2.3.23. The unit shall automatically clear all displays with any mode of operation change.
- 2.3.24. The antenna of the system shall transmit a left-hand, circularly polarized, microwave beam from a horn antenna. The antenna RF beamwidth shall not exceed 12°, measured between the half power points, and operate in the Ka-Band frequency range of 33.4 to 36.0 GHz, allowing for a maximum manufacturing tolerance of 1°.
- 2.3.25. The antenna horn shall be completely free from seams, welds or solder joints, etc. It shall be precisely constructed so that the transmitted microwave beam is a highly symmetrical conical shaped signal for target discrimination. The horn shall be rigidly supported at both ends to inhibit movement in normal use.
- 2.3.26. The antenna shall utilize a Gunn effect diode as the microwave source. It shall use a low-noise Schottky barrier diode as the receiver. The filaments of the diodes used in the microwave source and receiver shall be welded and bonded. Units using "cat whisker" diode types are not acceptable, due to their greater rates of failure.
- 2.3.27. Under no circumstance shall the radar unit produce an RF microwave power density level in excess of 5 mW/cm², measured 5 cm from the aperture of the antenna.
- 2.3.28. The radar unit shall be protected from normal use weather elements such as dust, rain and snow. It shall be capable of being used in these environments without the use of covers or external protection.

- 2.3.29. The unit shall be capable of detecting speedometer input pulses from the vehicle's speed transducer. These pulses shall be used to direct the DSP computer to search for the Doppler patrol speed signal at the appropriate portion of the frequency spectrum. The unit shall use the speedometer signal for comparison to the actual Doppler patrol speed.

The unit shall detect the presence of the speedometer input pulses and display the Doppler patrol speed in the patrol speed window. When no speedometer input pulses are received, the patrol speed window shall be blank.

- 2.3.30. The unit shall be capable of synchronizing the patrol vehicle's speedometer input pulses with the Doppler patrol speed return signal. The unit shall be capable of operating in the absence of speedometer input pulses. Depressing the TEST switch shall allow the system to operate without speedometer input pulses such as for tuning fork tests, or if the speedometer input should become defective. The system shall recall the synchronization number automatically upon detecting speedometer pulses again.
- 2.3.31. The unit shall use commands from the handheld remote control Patrol Blank switch to synchronize the speedometer input pulses and the Doppler patrol speed return signal.

2.4. **REMOTE CONTROL UNIT REQUIREMENTS**

- 2.4.1. The unit shall be equipped with a lightweight, glow-in-the-dark, wireless handheld remote control unit that allows the operator to instantaneously control the following functions:
- RF Hold. A momentary switch which turns the antenna's RF transmitter on and off in order to avoid detection by radar detecting devices.
 - Lock/Release. A dual purpose momentary switch which locks or releases the displayed speed(s).
 - Fastest/Slower. A momentary switch used in the stationary or moving/opposite direction mode to tell the counting unit to display the speed of the fastest vehicle in the radar beam. In the moving/same direction mode to tell the counting unit the target vehicle is slower than the patrol vehicle's speed.
 - Opposite/Same. A momentary switch used to select, in the moving mode, opposite direction traffic or same direction traffic.
 - Patrol Blank. A momentary switch used to blank the locked patrol speed display. Depressing this switch a second time will return the locked patrol speed. Also used for synchronizing with the speedometer input.
- 2.4.2. The remote control shall be designed to fit in the palm of the hand. It shall be made of extruded aluminum with rounded corners. It shall have no sharp corners or edges. It shall be approximately 4.0" in length, 2.0" wide and 1.0" deep.
- 2.4.3. For use with the mounting pod, a wired remote control shall connect to the docking module with a jacketed 3-conductor cable that is impervious to deterioration from oil and sunlight. The cable shall be 6 feet in length. The cable shall be fitted to the remote control unit with a molded strain-relief. At the opposite end, the cable shall be terminated with a miniature 3-conductor 3.5 mm plug.

2.5. **TUNING FORK REQUIREMENTS**

- 2.5.1. The contractor shall furnish two tuning forks. When the lower frequency fork is rung and placed in front of the transmitting antenna, it shall produce a speed on the radar unit of 35 mph. The higher frequency tuning fork shall produce a speed of 65 mph. Tuning forks shall have factory certification as to accuracy, traceable to the National Institute of Standards and Technology, and shall have individual serial numbers stamped on each tuning fork.
- 2.5.2. Each tuning fork shall have a soft protective pouch type cover.
- 2.5.3. Tuning forks shall be accurate within ± 1 mph of the calibration frequency.

2.6. **MOUNTING BRACKET REQUIREMENTS**

- 2.6.1. The manufacturer shall have unit-mounting brackets available for the dash of various popular style patrol vehicles. The exact type required will be specified on purchase order or bid sheet.
- 2.6.2. The dash mount shall be fabricated from 1/16" (approximate) thickness aluminum or steel. The dash mount shall be designed so as to electrically shield the front of the antenna unit from the top of the dashboard, to minimize interference from noise sources including the heater/A-C fan motor. Aluminum parts shall be anodized or painted flat black. Steel parts shall be electroplated with chrome, nickel or cadmium, etc. The front of the dash mount shall be equipped with at least two suction mounting discs composed of synthetic material, which shall not harden or degrade under sunlight or heat conditions.
- 2.6.3. The dash mount shall allow the docking module easy adjustment in the horizontal and vertical planes, without need of tools.
- 2.6.4. The "handle-on" mounting bracket shall allow easy access by the operator to remove the radar unit from the mount, changing to the stationary, trigger operation, mode automatically. When the unit is placed back on the mount, it

shall automatically switch to the moving mode, if it was operating in the moving mode when removed.

- 2.6.5. All mounting brackets shall be free of sharp edges and protruding parts. Mounting brackets shall have smooth, rounded edges, wherever possible, to improve operator safety.
- 2.6.6. Mounting brackets shall be designed so that they may be easily removed from the patrol vehicle.

2.7. **AUXILIARY POWER CABLE REQUIREMENTS**

- 2.7.1. An optional auxiliary shielded power cable with female receptacle must be available from the manufacturer. It shall use ring terminals to connect directly to the vehicle's battery posts and be shielded to limit interference from the vehicle's electrical, radio and ignition systems. The female receptacle shall have an under-dash mounting bracket and shall be compatible with the radar unit's power cable plug. The cable shall have a 2 amp SLO-BLO fuse for protection.

2.8. **OPERATING INSTRUCTIONS MANUAL REQUIREMENTS**

- 2.8.1. A full and complete set of operating instructions, with case law history in the use of traffic radar and trouble shooting guide, shall be furnished by the contractor with each unit.
- 2.8.2. The contractor shall make available complete radar operator training. This shall consist of basic Doppler theory, stationary operation, fastest mode operation, potential interferences, and practical in-field applications.

2.9. **MANUFACTURER'S QUALITY CONTROL AND TESTING REQUIREMENTS**

- 2.9.1. All electronic components shall be high reliability commercial grade parts.
- 2.9.2. All assembled printed circuit boards and sub-assemblies shall be thoroughly inspected and completely tested mechanically and electrically before installation into the radar unit.
- 2.9.3. All printed circuit boards shall be glass epoxy, type FR4 or equivalent. Also, all circuit boards shall be solder masked.
- 2.9.4. All components dissipating power in excess of one watt and mounted directly against a circuit board shall have adequate heat sinks for circuit board protection. All electronic and electrical components shall only be utilized within their manufacturer's operating specifications pertaining to voltage, current and heat dissipation characteristics.
- 2.9.5. Each complete radar unit shall be individually bench tested for all functions and test parameters, then submitted to +57° C (135° F) ambient burn in under power for 24 hours minimum, then retested on the bench. In addition, each radar unit shall be field tested in all modes of operation.
- 2.9.6. Transmitter and tuning fork frequencies shall be certified with test equipment traceable to the National Institute of Standards and Technology as a final test before units are shipped. A factory certificate of accuracy shall be furnished for each tuning fork frequency and for the radar unit's transmitter operating frequency.

2.10. **WARRANTY REQUIREMENTS**

- 2.10.1. The manufacturer shall fully guarantee his traffic radar systems to be free of defects in materials and workmanship for a period of two (2) years from the date of delivery to the agency. All shipping charges (both ways) shall be at the expense of the manufacturer for the first 90 days after delivery of the radar units. Thereafter, shipping charges from the agency to manufacturer shall be at the expense of the agency. Return shipping charges from the manufacturer to the agency shall be at the sole expense of the manufacturer, during the warranty period.

2.11. **DEVIATION(S)**

- 2.11.1. Any deviation(s) to the above specification(s) shall be listed on a separate sheet(s) of paper and attached to the bid response form identifying the section number, component(s) with deviation(s) and a clearly defined explanation for the deviation(s).
- 2.11.2. It is the bidder's responsibility to submit a bid that meets all mandatory specifications stated within. Because of the variations in manufacturer's construction, the bidder must compare their product bid with the required listed minimum specifications and identify any deviations. Failure to properly identify deviations may render the bidder's proposal non-responsive and not capable of consideration for award. Bidders should note that a descriptive brochure of the model bid may not be sufficient or acceptable as proper identification of deviations from the written specifications.

2.12. **DESIGNEE** – Boone County Sheriff's Department 2121 County Drive, Columbia, MO 65202.

- 2.12.1. **Contact** - Heather Turner, Buyer, 601 E. Walnut, Room 209, Columbia, MO 65201. Telephone (573) 886-4392 or Facsimile (573) 886-4390 or Email: hturner@boonecountymmo.org

2.13. **DELIVERY TERMS:** FOB Destination – Boone County Sheriff's Department, 2121 County Drive, Columbia, MO 65202. Delivery shall be made FOB Destination with freight charges fully included and prepaid. The seller pays and bears the freight charges.

2.14. **ADDITIONAL TERMS AND CONDITIONS:**

- 2.14.1. Vendor must include complete descriptive product literature for each proposed piece of equipment.
- 2.14.2. Bid evaluation will be based on quality, reliability, delivery time ARO, and cost. Quality and reliability may be determined by using information contained in product reviews from established publications and/or demonstration of equipment.

3. Response Presentation and Review

- 3.1. **RESPONSE CONTENT** - In order to enable direct comparison of competing Responses, Bidder must submit Response in strict conformity to the requirements stated herein. Failure to adhere to all requirements may result in Bidder's Response being disqualified as non-responsive. All Responses must be submitted using the provided Response Sheet. Every question must be answered and if not applicable, the section must contain "N/A." Manufacturer's published specifications for the items requested shall be included with the response.
- 3.2. **SUBMITTAL OF RESPONSES** - Responses MUST be received by the date and time noted on the title page under "Bid Submission Information and Deadline". NO EXCEPTIONS. The County is not responsible for late or incorrect deliveries from the US Postal Service or any other mail carrier.
 - 3.2.1. **Advice of Award** - If you wish to be advised of the outcome of this Bid, the results may also be viewed on our web page www.showmeboone.com.
- 3.3. **BID OPENING** - On the date and time and at the location specified on the title page, all Responses will be opened in public. Brief summary information from each will be read aloud, and any person present will be allowed, under supervision, to scan any Response.
 - 3.3.1. **Removal from Vendor Database** - If any prospective Bidder currently in our Vendor Database to whom the Bid was sent elects not to submit a Response and fails to reply in writing stating reasons for not bidding, that Bidder's name may be removed from our database. Other reasons for removal include unwillingness or inability to show financial responsibility, reported poor performance, unsatisfactory service, or repeated inability to meet delivery requirements.
- 3.4. **RESPONSE CLARIFICATION** – The County reserves the right to request additional written or oral information from Bidders in order to obtain clarification of their Responses.
 - 3.4.1. **Rejection or Correction of Responses** – The County reserves the right to reject any or all Responses. Minor irregularities or informality in any Response which are immaterial or inconsequential in nature, and are neither affected by law nor at substantial variance with Bid conditions, may be waived at our discretion whenever it is determined to be in the County's best interest.
- 3.5. **EVALUATION PROCESS** – The County's sole purpose in the evaluation process is to determine from among the Responses received which one is best suited to meet the County's needs at the lowest possible cost. Any final analysis or weighted point score does not imply that one Bidder is superior to another, but simply that in our judgment the Contractor selected appears to offer the best overall solution for our current and anticipated needs at the lowest possible cost.
 - 3.5.1. **Method of Evaluation** – The County will evaluate submitted Responses in relation to all aspects of this Bid.
 - 3.5.2. **Acceptability** – The County reserves the sole right to determine whether goods and/or services offered are acceptable for County use.
 - 3.5.3. **Endurance of Pricing** – Bidder's pricing must be held until contract execution or 60 days, whichever comes first.

4. **Response Form**

- 4.1. Company Name: _____
- 4.2. Address: _____
- 4.3. City/Zip: _____
- 4.4. Phone Number: _____
- 4.5. Fax Number: _____
- 4.6. Federal Tax ID: _____

- 4.6.1. () Corporation
- () Partnership - Name _____
- () Individual/Proprietorship - Individual Name _____
- () Other (Specify) _____

4.7. **PRICING**

	<u>Unit Price</u>	<u>QTY</u>	<u>Extended Price</u>
--	-------------------	------------	-----------------------

Radar Units (including cords, handles, wireless remote, tuning forks, carrying case, operator's manual, mounting bracket, and complete operator training)

4.7.1.	\$ _____	12	\$ _____
--------	----------	----	----------

4.8. **Optional Equipment**

4.8.1. Fastest Vehicle Mode	\$ _____	12	\$ _____
-----------------------------	----------	----	----------

4.8.2. Battery Handles with Charger	\$ _____	2	\$ _____
-------------------------------------	----------	---	----------

4.9. **GRAND TOTAL**

\$ _____

4.10. **DESCRIBE ANY DEVIATIONS**

4.11. **DESCRIBE WARRANTY**

4.12. **The undersigned offers to furnish and deliver the articles or services as specified at the prices and terms stated and in strict accordance with all requirements contained in the Request for Bid which have been read and understood, and all of which are made part of this order. By submission of this bid, the vendor certifies that they are in compliance with Section 34.353 and, if applicable, Section 34.359 (“Missouri Domestic Products Procurement Act”) of the Revised Statutes of Missouri.**

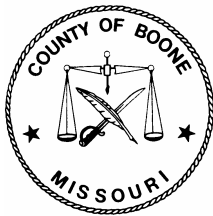
4.12.1. Authorized Representative (Sign By Hand):

_____ Date: _____
Print Name and Title of Authorized Representative

4.13. Will you honor the submitted prices for purchase by other entities in Boone County who participate in cooperative purchasing with Boone County, Missouri?

_____ Yes _____ No

4.14. Delivery ARO: _____



Standard Terms and Conditions

Boone County Purchasing
601 E. Walnut, Room 209
Columbia, MO 65201

Heather Turner, Buyer
573/886-4392 - FAX 573/886-4390

1. Responses shall include all charges for packing, delivery, installation, etc., (unless otherwise specified) to the Boone County Department identified in the Request for Quotation and/or Proposal.
2. The Boone County Commission has the right to accept or reject any part or parts of all bids, to waive technicalities, and to accept the offer the County Commission considers the most advantageous to the County. Boone County reserves the right to award this bid on an item-by-item basis, or an "all or none" basis, whichever is in the best interest of the County.
3. Bidders must use the bid forms provided for the purpose of submitting bids, must return the quotation and bid sheets comprised in this bid, give the unit price, extended totals, and sign the bid.
4. When products or materials of any particular producer or manufacturer are mentioned in our specifications, such products or materials are intended to be descriptive of type or quality and not restricted to those mentioned.
5. Do not include Federal Excise Tax or Sales and Use Taxes in bid process, as law exempts the County from them.
6. The delivery date shall be stated in definite terms, as it will be taken into consideration in awarding the bid.
7. The County Commission reserves the right to cancel all or any part of orders if delivery is not made or work is not started as guaranteed. In case of delay, the Contractor must notify the Purchasing Department.
8. In case of default by the Contractor, the County of Boone will procure the articles or services from other sources and hold the Bidder responsible for any excess cost occasioned thereby.
9. Failure to deliver as guaranteed shall disqualify Bidder from future bidding.
10. Prices must be as stated in units of quantity specified, and must be firm. Bids qualified by escalator clauses may not be considered unless specified in the bid specifications.
11. No bid transmitted by fax machine will be accepted.
12. The County of Boone, Missouri expressly denies responsibility for, or ownership of any item purchased until same is delivered to the County and is accepted by the County.
13. The County reserves the right to award to one or multiple respondents. The County also reserves the right to not award any item or group of items if the services can be obtained from a state or other governmental entities contract under more favorable terms.

Boone County Purchasing
Heather Turner
Buyer



601 E. Walnut-Room 209
Columbia, MO 65201
Phone: (573) 886-4392
Fax: (573) 886-4390

“NO BID” RESPONSE FORM

NOTE: COMPLETE AND RETURN THIS FORM ONLY IF YOU DO NOT WISH TO SUBMIT A BID

If you do not wish to respond to this bid request, but would like to remain on the Boone County vendor list **for this service/commodity**, please remove form and return to the Purchasing Department. The reverse side of the form is pre-addressed, so that it can be folded in thirds, sealed with tape, and mailed. *If you would like to FAX this “No Bid” Response Form to our office, the FAX number is (573) 886-4390.*

If you have questions, please call the Purchasing Office at (573) 886-4392. Thank you for your cooperation.

Bid Number 19-22MAR05

(Business Name)

(Date)

(Address/P.O. Box)

(Telephone)

(City, State, Zip)

(Contact)

REASON(S) FOR NOT SUBMITTING A BID:

(Fold Here Second – Then Seal With Tape)

Boone County Purchasing Department
601 E. Walnut Street, Room 209
Columbia, MO 65201-4460

Place
Stamp
Here

Boone County Purchasing Department
601 E. Walnut Street, Room 209
Columbia, MO 65201-4460

Bid Number: 19-22MAR05

Vendor Name: _____

(Fold Here First)