

**REQUEST FOR PROPOSALS**  
**Department of Transportation SMART Project Implementation**  
**Drone Software, Hardware, Training & Support Services**

**RFP Number:** SMART Three

**Issuance Date:** Thursday, April 18, 2024

**Closing Date:** Monday, May 20, 2024

**Contact Person:** Debra Ohlde

**Contact Email:** [communitydevelopmentadvisor@ncrpc.org](mailto:communitydevelopmentadvisor@ncrpc.org)

**Contact Phone:** 785-275-2499 – direct line; 785-738-2218 office main number

**Introduction:**

The North Central Regional Planning Commission (NCRPC), 109 N. Mill St., Beloit, Kansas 67420, as recipient of a Department of Transportation SMART (Strengthening Mobility and Revolutionizing Transportation) Grant entitled Smart Counties in Kansas (Grant), seeks to purchase multiple quadcopter drone systems which will be used by county-level officials to gather data related to local transportation infrastructure.

This program is funded by Federal grants and therefore is subject to rules and regulations attached herein as well as others which govern the program and are pertinent to 2 CFR 200. Proposals are due by **Monday, May 20, 2024, at 3:00 PM CDT** where they will be publicly opened at 109 N. Mill St, Beloit, Kansas, and initially reviewed for compliance with instructions. Contractor selection will take place no later than **Wednesday, May 30, 2024**. The selected contractor must be able to deliver the systems (hardware and software) by **Monday, June 24, 2024**.

**Project (systems and services) Description Summary:** SMART Counties in Kansas proposes to prototype the use of drone technology for transportation asset monitoring in concert with a GIS-based platform that integrates local infrastructure assets. The goal of this project is to provide innovative data monitoring of asset conditions and inform technical solutions for rural infrastructure management in Kansas. The scope of this RFP covers drone hardware, software, and complementary regulatory services for the NCRPC, staff training, and technical support. The full SMART Grant project description is available at the NCRPC Website <https://www.ncrpc.org/federal-transportation-funding-announced-for-north-central-kansas/>.

## Scope of Systems and Services Requested

### Background

The NCRPC is working with four (4) separate counties, each of which is interested in acquiring two (2) modular drone systems capable of performing multiple tasks. Details of desired system capabilities are provided later, but the NCRPC is minimally asking a contractor(vendor) to detail:

- Quadcopter Drone systems with modular capabilities.
- Training sessions on drone hardware and software operation.
- On-going technical assistance contractor can provide for both hardware and software.

The contractor is not required to be the manufacturer of the drone hardware or software. However, the contractor must possess the capability to offer the initial training along with the on-going technical assistance as cited.

The Quadcopter drones will be utilized in one or more of the following county-level transportation department scenarios.

- Use Case 1: Bridge Inspection  
Drones will be utilized to conduct bridge inspections, ensuring safety and efficiency during operation. The resolution of captured images should enable analysis at the bridge component level.
- Use Case 2: Roadway Inspection  
Drones, using a variety of imagery technologies, will be used to evaluate and monitor roadbed conditions, including, but not limited to, surface and subsurface conditions, and marking deterioration.
- Use Case 3: Bulk Material Quantity Survey  
Drones should have the capability to conduct material quantity takeoff, either through its own functionality or by carrying relevant sensors for this purpose, such as measuring stockpile volumes. The collected data should facilitate downstream analysis, streamlining material management processes effectively.
- Use Case 4: Flooding Evaluation  
Drones may be used to conduct flooding evaluations, a task traditionally facilitated by Lidar sensors. Alternatively, if the drone does not come equipped with a Lidar sensor, it should have the capability to carry such a sensor as part of its payload. This ensures the drone's effectiveness in accurately assessing flood-prone areas and providing valuable data for flood risk management and mitigation efforts.
- Use Case 5: Terrain Modeling for Road, Bridge, and Channel Improvement Projects  
Drones may be used to collect topographic data for transportation improvement projects. Sensors (camera, LiDAR, etc.) will be used to collect the existing features and ground terrain.

The LiDAR sensor must be able to penetrate dense tree canopy to collect the ground terrain in channels and other heavily wooded areas.

The drones may be further used in the following scenarios:

- Use Case 6: Emergency Response  
Drones may be required to perform emergency response tasks, including conducting search and rescue missions, and monitoring wildfire conditions. Equipping the drone with night vision technology is optimal for addressing emergencies that occur in low-light conditions. Additionally, integrating infrared or thermal imaging capabilities will enable the detection of live creatures, further enhancing its effectiveness in various scenarios.
- Use Case 7: Real Estate Appraisal  
Drones may be used to perform real estate appraisal tasks, encompassing functions such as identifying additions, evaluating appearances, and more. Its advanced capabilities will enable detection of property changes and thorough assessments of visual aspects, contributing to a comprehensive appraisal and management process.

### **Equipment / Support Specifications**

The NCRPC seeks to acquire eight (8) quadcopter modular drone systems plus accessory photographic and imaging hardware and software. Each system should have the ability to accommodate one or more of the following payloads (e.g., conventional camera, thermal / infrared sensor, photogrammetry camera, LiDAR sensor).

Those submitting proposals are not limited to proposing only one (1) specific drone make or model. Contractors are encouraged to provide multiple options using alternative combinations of systems and hardware to meet different use cases. While price will be considered when the final decision is made, it will not be the sole factor in that decision.

Compliance with both the National Defense Authorization Act (NDAA) and the Buy America Act is mandatory. This will necessitate proof documentation for each system and the additional technologies to be part of the submission package.

#### Basic System capability:

The drone systems must be able to fly around bridges, through culverts of various sizes, and along roadways using conventional cameras to take and download photographs as instructed by the operator / pilot. The following provides a synopsis of the essential requirements. Any proprietary technical or support limitations inherent in the system proposed should be clearly specified.

1. Drone system: Quadcopter drone with a modular airframe and the ability to adapt to various configurations for different purposes and environments.
2. Camera: The minimal camera specifications for inspection task include first-

- person view, 90-degree camera motion, night vision, general zoom-in capability, and 4k x 4k resolution.
3. Power: On-board battery, accompanied by its own dedicated charger.
  4. Functionality: System should have
    - obstacle avoidance capability,
    - self-hovering capability,
    - stabilization capabilities for picture and camera purposes,
    - allow for remote operation, and
    - be able to fly in winds up to 20 mph.
  5. Warranty: Each system should be warranted for at least one (1) year.

#### Optional Additions:

The total final number of systems ultimately purchased will be at the sole discretion of the NCRPC with the following options being included in that decision.

6. RTK/PPK capability: Unit cost of adding this to the drone systems proposed; or identify the make and model of a drone system that features this functional capability as a part of its design.
7. Backup batteries: Backup batteries (model and number provided by contractor) to sustain crew operation in the field for a working day of 8 hours.

*Contractors are to submit prices for one (1) unit each of the following technologies, identifying price breaks, if any, for the purchase of up to four (4) units of each technology.*

8. Infrared camera/software: Provide the ability to detect living beings for emergency response purposes.
9. Thermal camera/software: Provide the ability to detect living beings for emergency purposes, as well as monitor wildfires and detect delamination in bridge deck concrete overlays.
10. Photogrammetry camera / software: Provide the ability to measure construction material piles and other 3-dimensional objects.
11. LiDAR sensor / software: Provide the ability to penetrate vegetation cover.

#### Training support

Training is to be provided for ten (10) individuals to develop operational proficiency for both the drone system and onboard payload(s). It is recommended that proposals include cost scenarios detailing different options such as:

1. Product training options
  - On-site (vendor visit to Cloud, Cowley, Saline, and Sedgwick counties)
  - Combined training option (single location training involving all counties provided by in person by vendor)
  - Remote (vendor training provided to each location via video conference method)

- Other training support options if not included in the above.
2. Address the cost of on-going support, if needed by each county.
  3. Describe the timeline and the number of days training required for basic, intermediate, and advanced operational proficiency of the drone.
  4. Describe the options available for post-contract training.

### Software Recommendations

Contractors are encouraged to propose additional software which ensures optimal use of the drone and training.

## **Project Specifications and Timelines**

**Questions** concerning project specifications can be directed to:

- Deb Carlson Ohlde, Project Manager
- **Contact Email:** [communitydevelopmentadvisor@ncrpc.org](mailto:communitydevelopmentadvisor@ncrpc.org)
- **Contact Phone:** 785-275-2499 – direct line; 785-738-2218 office main number

### **Addendum(s):**

Addendums to this RFP may be issued. In such cases, they will be posted on the NCRPC website when they occur up until 12:00 PM (CT) on **May 10, 2024**. We ask all contractors / vendors who wish to submit a proposal to notify the Project Manager of that intent. Those doing so will be notified directly of all such addendums no later than that same date and time.

**Contract Start Date:** **June 7, 2024** – negotiable by request, but no later than **June 14, 2024**.

**Contract End Date:** **December 31, 2024**

Following proposal reviews the NCRPC may conduct telephone interviews. If the latter are deemed necessary, the internal Project Committee will rank the Contractor proposals based on ability and on price. The NCRPC reserves the right to reject all proposals and to negotiate the work plan and fees with the selected contractor.

### **Budget and Contract:**

The North Central Regional Planning Commission (NCRPC), as the grant recipient, will enter into a contract with the successful contractor. Contractors will outline proposed costs including personnel, fringe, travel (if proposed), and indirect costs as part of their proposal – see more below. All portions of this RFP will become part of the contract between the NCRPC and the contractor.

## Directions for Submission of Proposals

Interested individuals, firms and/or organizations are to submit **SEALED** proposals via USPS / UPS / FedEx to the following address:

Attn: Deb Carlson Ohlde  
North Central Regional Planning Commission  
109 N. Mill Street, P.O. Box 565  
Beloit, KS 67420

All proposals should be clearly marked "**DRONE PROPOSAL**" on the outside of the sealed envelope.

**DEADLINE: ALL PROPOSALS MUST BE RECEIVED BY MONDAY, MAY 20, 2024, 3:00 PM CDT. POSTMARKED ON THAT DATE IS NOT SUFFICIENT.**

**WARNING: All delivery services run scheduled daily routes to Beloit. The timing of their delivery schedules do not always ensure proposals are received by a deadline like that set above even if such proposals are sent "Next Day Delivery".**

It is the sole responsibility of the contractor to make certain the response is received in its entirety by the deadline.

### Proposal Criteria

Proposals must show the contractor holds appropriate qualifications and/or experience reflecting the services needed; illustrate they have previously provided services similar to those specified herein; and, at a minimum, include the following information:

1. Contractor name and address.
2. Brief history of operation and range of service capabilities.
3. Drone systems and services with prices broken down as follows:
  - Drone system make and model, including description of its modular capabilities, identifying which of the following technologies it is capable of supporting: conventional photography, photogrammetry, infrared / thermal imaging sensor, and LiDAR imaging sensor.
  - Number of Units proposed.
  - Unit price
  - Total Price
4. Pricing of sensor technologies not included in drone system but supported by the system proposed.
  - Individual sensor type (e.g., photogrammetry, infrared / thermal imaging sensor, or LiDAR imaging sensor).
  - Number of units proposed.
  - Unit price
  - Total Price

5. Training available and on-going support pricing
  - Drone system(s)
  - Sensor technology(ies)
6. Certification of American-Made Product or any documentation certifying that drone systems are in compliance with Buy America Requirements.
7. Any additional cost and service justification.

Proposals should be no more than **5 pages in length, single spaced, 12-point Times New Roman, Calibri, or Arial font**. This page limit does not include attachments. Contractors are encouraged to include the form attached to these instructions as a worksheet to help explain their proposal. It does not count as part of the 5-page restriction.

## **Proposal Scoring**

NCRPC will review responses and prioritize and rank proposals for project support and implementation. The maximum total score possible is **100 points**.

- Qualifications & Capabilities with implementation of drone in the use cases specified (10 pts)
- Qualifications & Capabilities for meeting specified software requirements (10 pts)
- Demonstrated knowledge and experience in specified drone specs and training (20 pts)
- Responsiveness to RFP – ability to meet start date requirements and provide realistic timeline/milestones (10 pts)
- References (10 pts)
- Cost proposal, budget proposal (40 pts.)

## **Anticipated NCRPC RFP Review & Award Timeline**

- Review of RFPs – May 20<sup>th</sup> to May 23<sup>rd</sup>, 2024
- Interview and(or) product demonstration, if desired – May 24<sup>th</sup> to May 30<sup>th</sup>, 2024
- Award Announcement & Contract Negotiations – May 31<sup>st</sup> to June 7, 2024

***Note:** NCRPC cannot be held responsible for any changes to this proposed schedule.*

## **Notice of Award**

Notice of award letter or purchase order resulting from this RFP will be furnished to each successful contractor and shall result in a binding contract without further action by either party. NCRPC will draft and provide an agreement for services to be executed by both parties. No additions, deletions or changes of any kind shall be made to this contract without prior approval of NCRPC.

All entities awarded and/or entering contracts with the North Central Regional Planning Commission shall be subject to and required to comply with all applicable state and federal provisions pertaining to non-discrimination, Equal Employment Opportunity and Affirmative Action including, but not limited to the items below. Responsive contractors should be familiar with information listed at the [NCRPC](#)

[procurement portal](#). Click on the drop down for the SMART program and general procurement obligations related to this opportunity.

## **Program and Grant Award Specifics**

This project is designated as a project that is not considered “projects for infrastructure” and will be subject to requirements of the Buy America Act (“BAA”) (Pub. L. No. 72–428, as codified at 41 U.S.C. §§ 8301–8303).

More information can be found here: [Guidance on Domestic Preference Requirements for the SMART Grants Program](#).

The North Central Regional Planning Commission (NCRPC) and all sub-recipients, contractors, successors, transferees, and/or assignees must comply with all applicable provisions governing DOT/OST’s access to records, accounts, documents, information, facilities, and staff. In addition, NCRPC and all sub-recipients, contractors, successors, transferees, and/or assignees recognizes the requirement to comply with any program or compliance reviews, and/or complaint investigations conducted by DOT/OST, the requirement to keep records, reports, and submit the material for review upon request to DOT/OST, or its designee in a timely, complete, and accurate way. Additionally, the NCRPC and all sub-recipients, contractors, successors, transferees, and/or assignees must comply with all other reporting, data collection, and evaluation requirements, as prescribed by law or detailed in program guidance. All program guidance and the requirements laid out in this RFP are hereby incorporated into any contract entered between the NCRPC and all sub-recipients, contractors, successors, transferees, and/or assignees.

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

### **Pertinent Non-Discrimination Authorities:**

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 C.F.R. Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 C.F.R. Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);



- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. Parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. § 1681 et seq.)
- *Workplace Safety*: In accordance with Executive Order 13513, Federal Leadership on Reducing Text Messaging While Driving (Oct. 1, 2009) and DOT Order 3902.10, Text Messaging While Driving (Dec. 30, 2009), the Recipient, subrecipients, contractors, and subcontractors are encouraged to:
  1. Adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers including policies to ban text messaging while driving—
    - Company-owned or -rented vehicles or Government-owned, leased or rented vehicles; or
    - Privately-owned vehicles when on official Government business or when performing any work for or on behalf of the Government.
  2. Conduct workplace safety initiatives in a manner commensurate with the size of the business, such as—
    - Establishment of new rules and programs or re-evaluation of existing programs to prohibit text messaging while driving; and
    - Education, awareness, and other outreach to employees about the safety risks associated with texting while driving.

**Additional Requirements:**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest agrees as follows:

**1. Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally assisted programs of the U.S.

Department of Transportation, Maritime Administration (DOT/OST), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 C.F.R. Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or DOT/OST to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or DOT/OST, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or DOT/OST may determine to be appropriate, including, but not limited to:

- a. withholding payments to the contractor under the contract until the contractor complies; and/or
- b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or DOT/OST may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

**Termination of Contract**

The contract is subject to termination by either party with 60 days' written notice.

**Conflict of Interest**

The Invitation to Bid hereunder is subject to the provisions of the Kansas Statutes. All suppliers must disclose with the bid the name of any officer, director or agency that is also an employee of North Central Regional Planning Commission or any of its agencies. Further, all suppliers must disclose the name of any Employee who owns, directly or indirectly, any interest of twenty-five percent (25%) or more in the supplier's firm or any of its branches.

Item	Units	Unit Cost	Total
<b>Basic System</b>			
<p><b>Drones:</b> Quadcopter drone with a modular airframe and the ability to adapt to various configurations for different purposes and environments.</p> <p>Functionality: System should have:</p> <ul style="list-style-type: none"> <li>• obstacle avoidance capability,</li> <li>• self-hovering capability,</li> <li>• stabilization capabilities for picture and camera purposes,</li> <li>• allow for remote operation, and</li> <li>• be able to fly in winds up to 20 mph.</li> </ul>			
<p><u>Alternative 1:</u> Make &amp; Model (capable of supporting conventional photography and thermal imaging)</p>	7		
<p><u>Alternative 2:</u> Make &amp; Model (capable of supporting multiple imaging technologies, including LiDAR)</p>	1		
<p><b>Camera:</b> The minimal camera specifications for inspection task include first-person view, 90-degree camera motion, night vision, general zoom-in capability, and 4k x 4k resolution.</p>	8		
<p><b>Power:</b> On-board battery, accompanied by its own dedicated charger.</p>	8		
<p><b>Warranty:</b> Each system should be warrantied for at least one (1) year.</p>	8		

Optional Additions			
<b>RTK/PPK capability:</b> Unit cost of adding this capability to the drone systems proposed.	1		
<b>Backup batteries:</b> Backup batteries (model and number provided by contractor) to sustain crew operation in the field for a working day of 8 hours.			
<b>Infrared camera/software:</b> Provide the ability to detect living beings for emergency response purposes.	1		
<b>Thermal camera/software:</b> Provide the ability to detect living beings for emergency purposes, as well as monitor wildfires and detect delamination in bridge deck concrete overlays.	1		
<b>Photogrammetry camera / software:</b> Provide the ability to measure construction material piles and other 3-dimensional objects.	1		
<b>LiDAR sensor / software:</b> Provide the ability to penetrate vegetation cover.	1		
Training Support			
<b>Product training options</b> <ul style="list-style-type: none"> <li>▪ On-site (vendor visit to Cloud, Cowley, Saline, and Sedgwick counties)</li> <li>▪ Combined training option (single location training involving all counties provided by in person by vendor)</li> <li>▪ Remote (vendor training provided to each location via video conference method)</li> <li>▪ Other training support options if not included in the above.</li> </ul>			
<b>On-going support:</b> Nature and cost of such support.			