RESTRICTION OF COMPETITION MFR

1. Agency/Contracting Activity: Engineer Research and Development Center – Construction and Engineering Research Laboratory (EDRC – CERL)

2. Description of Action:

Nature: ☐ New Requirement ☒ Follow-On Requirement

☐ Mod to Existing Purchase Order/Contract Number

Pricing: ☒ Firm-Fixed Price ☐ Time and Materials

Funds: ☐ OMA ☒ Other Funds 6.2 Army RDT&E

3. Description of Supplies/Services:

a. The total estimated dollar value of the proposed action is [redacted]
b. ERDC-CERL requires the following Illumina brand accessory equipment for operation of the Illumina NextSeq 2000 next-generation sequencing platform currently owned and in use at the laboratory. Specifically required are:

- Illumina NextSeq 2000 P4 XLEAP-SBS Reagent Kit - 300 Cycles, (quantity of 10),
- Illumina NextSeq 1000/2000 P2 XLEAP-SBS Reagent Kit - 600 Cycles, (quantity of 2)
- Illumina PhiX Control v3 (quantity of 5)

4. Authority: RFO FAR 12.102(a): For acquisitions valued at or below the simplified acquisition threshold (SAT), document the decision that only one source is available and the basis for the decision. This includes the use of brand-name descriptions without allowing for "equal" products.

5. Reason for Authority Cited: The government requires the specific Illumina brand equipment for operation of DNA sequencing equipment that it already owns. This instrument is the laboratory's sole high-throughput DNA sequencing platform and is used to advance government environmental DNA (eDNA) research capabilities supporting biodiversity monitoring, threatened and endangered species management, and pollinator surveillance on military installations. Continuous availability of compatible, manufacturer-validated sequencing reagent kits is essential to maintaining ongoing research operations and to maximize the return on prior government investment in the platform.

The required items are manufactured exclusively by Illumina, Inc. and available only through its authorized distributor network. The NextSeq 2000 P4 and NextSeq 1000/2000 P2 XLEAP-SBS Reagent Kits are supplied in single-use, pre-filled reagent cartridges and proprietary patterned flow cells that interface directly with the NextSeq 2000 instrument's fluidics, imaging, and on-board software systems. Substitution with reagent cartridges or flow cells from any other

manufacturer is likely impossible and, if attempted, could potentially render the existing government-owned NextSeq 2000 platform inoperable.

The accompanying Illumina PhiX Control v3 library provides run quality assurance and reproducibility of data generated on the platform. No equivalent products are manufactured by any other source that satisfy these requirements.

The required items must meet all of the following criteria:

1. **Illumina NextSeq 2000 P4 XLEAP-SBS Reagent Kit (300 Cycles), CAT# 20100992:** Powered by Illumina XLEAP-SBS sequencing-by-synthesis chemistry; provides kitted NextSeq 2000 reagents sufficient for 300 cycles of sequencing with dual-indexing support and up to 1.8 billion single reads per run; mechanically and electronically compatible with the NextSeq 2000 System only; maximum output of 540 Gb per run; supplied as an integrated kit including the proprietary P4 reagent cartridge, P4 patterned flow cell, and resuspension buffer (RSB with Tween 20).
2. **Illumina NextSeq 1000/2000 P2 XLEAP-SBS Reagent Kit (600 Cycles), CAT# 20100984:** Powered by Illumina XLEAP-SBS sequencing-by-synthesis chemistry; provides kitted NextSeq 1000/2000 reagents sufficient for 600 cycles of sequencing with dual-indexing support and up to 100 million single reads per run; mechanically and electronically compatible with the NextSeq 1000 and NextSeq 2000 Systems; supplied as an integrated kit including the proprietary P2 reagent cartridge, P2 patterned flow cell, and resuspension buffer (RSB with Tween 20).
3. **Illumina PhiX Control v3, CAT# FC-110-3001:** Manufacturer-validated, ready-to-use, adapter-ligated DNA control library specified by Illumina for run quality control and calibration on the NextSeq 2000 platform; supplied as 10 µL of a 10 nM template solution with an average insert size of approximately 500 bp and balanced base composition (~45% GC, ~55% AT); compatible with single-end and paired-end reads up to 300 bp; required as a spike-in control for cluster generation, cross-talk matrix calibration, phasing/prephasing calculations, and error-rate estimation in accordance with Illumina's published run protocols for the NextSeq 2000 System.

6. Actions to Increase Competition: A competitive solicitation will be posted to the Government Point of Entry (GPE) with a copy of this justification to include brand name specifications attached (redacted as necessary).

7. Market Research:

(1) The required items are proprietary consumables and control reagents manufactured exclusively by Illumina, Inc. The Illumina NextSeq 2000 P4 XLEAP-SBS Reagent Kit (CAT# 20100992), Illumina NextSeq 1000/2000 P2 XLEAP-SBS Reagent Kit (CAT# 20100984), and Illumina PhiX Control v3 (CAT# FC-110-3001) are designed specifically for use with the Illumina NextSeq 2000 sequencing platform. ERDC-CERL currently operates an Illumina NextSeq 2000 sequencing system, acquired under prior government contract, as the sole high-throughput DNA sequencing platform supporting eDNA-based biodiversity monitoring and

threatened and endangered species surveillance on military installations. The Illumina reagent kits are integral to operation of this instrument: each kit is supplied as a single-use, pre-filled reagent cartridge with an integrated proprietary patterned flow cell, both of which interface directly with the NextSeq 2000 instrument's fluidics, imaging, and on-board software systems. The PhiX Control v3 library is benchmarked against the manufacturer's validated quality metrics for the platform. No other commercially available reagent product replicates the proprietary cartridge and flow cell format required by the Illumina NextSeq 2000 platform, and no other control library can be substituted for Illumina's specific PhiX Control v3 formulation, which is required for data quality assurance and reproducibility.

(2) A comprehensive internet search for "Illumina NextSeq 2000 P4," " Illumina NextSeq 2000 P2," and "PhiX Control v3" confirms that Illumina, Inc. is the sole manufacturer of these consumables. One authorized Illumina reseller/distributor, Government Scientific Source (govsci.com), was identified as carrying all three required items. Additional suppliers were identified for the Illumina PhiX Control v3 only (e.g., QuestPair, questpair.com; Bio-Active Co., Ltd., bio-active.co.th); however, these suppliers do not appear to carry the required NextSeq 2000 reagent kits.

(3) The required items are not available on gsaadvantage.com

(4) The market research above was completed by the program management team, concluding on 14 May 2026.

(5) Additional market research on 26 May 2026 by the ERDC Contracting office found another potential small business vendor in iRepertoire Inc. Their Dynamic Small Business Database capabilities narrative states indicates they are a supplier of products for the molecular analysis of the immune system using next-generation sequencing (NGS) on Illumina systems.

8. Procurement History: The delivery order below was for the purchase of the Illumina NextSeq 2000 sequencing system. This procurement was executed in April 2024 via a Defense Logistics Agency (DLA) procurement vehicle. The contractor name is “Noble Supply & Logistics LLC.” The existence of competition on that action is unknown but it would appear they are another source to be considered for this current procurement.

Previous Purchase Orders(s) or Contract(s): ☒ Yes ☐ No

Purchase order or contract number:_ SPE8EH19D0017-SPW8EX24FW06H

Was action competed? ☐ Yes ☐ No **UNKNOWN**

If action was not competed, state the cited authority, summarize rationale:_ **UNKNOWN**

9. Additional information to support the justification: not applicable

10. Technical/Requirements Certification: I certify that the supporting data provided under my cognizance which is included in this decision to restrict competition document is accurate and complete to the best of my knowledge and belief.

Submitted By:
Position Title:
Email Address:
Signature: RHODES.ANGELA.M.1106416016 Digitally signed by RHODES.ANGELA.M.1106416016 Date: 2026.06.24 14:06:53 -05'00'
Date:

11. Fair and Reasonable Price Determination: As Contracting Officer, I hereby determine that the anticipated cost to the Government for this contract action will be fair and reasonable. Basis for the determination: price analysis techniques.

12. Contracting Officer's Approval: I hereby certify that this document is accurate and complete to the best of my knowledge and belief. Based on the foregoing, I approve this decision to restrict competition, subject to availability of funds, and provided that the services and supplies herein described have otherwise been authorized for acquisition.

Signature:_____
Typed Name:
Title:
Date: Andrea Thomas Digitally signed by Andrea Thomas Date: 2026.06.25 10:29:43 -05'00'