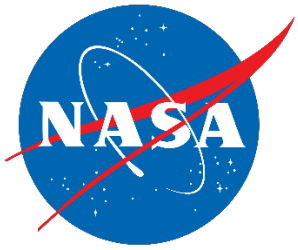

National Aeronautics and Space Administration

Exploration Systems Development Mission Directorate
NASA Headquarters
300 E ST SW
Washington, D.C. 20546-0001

Next Space Technologies for Exploration Partnerships – 2 (NextSTEP-2)

Appendix P: Human Landing System (HLS) Sustaining Lunar Development (SLD)

Broad Agency Announcement NNH19ZCQ001K_APPENDIX-P-HLS-SLD

Issued: September 16, 2022

Proposals Due: November 15, 2022, by 3:00 PM Central Time

NextSTEP-2 Appendix P Change Log

Version	Description of Significant Changes	Date
DRAFT Release	-------	March 31, 2022
2nd DRAFT Release	Updated NASA's goal for timing of the crewed demonstration mission	July 19, 2022
Final Release	Added 4.3.3 xEVAS Suits Approach; Removed Performance Work Statement (Attachment 14) reference in Section 4.4.3.2; Removed email option for proposal submission	September 16, 2022

Table of Contents

1 Introduction and Background

1.1 Introduction

Space Policy Directive-1 instructs NASA to "[l]ead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the Solar System and to bring back to Earth new knowledge and opportunities. Beginning with missions beyond low-Earth orbit, the United States will lead the return of humans to the Moon for long-term exploration and utilization, followed by human missions to Mars and other destinations."

To address a portion of these objectives, NASA instituted the Artemis campaign and awarded a contract for the development and demonstration of an initial crewed lunar lander capability in July 2021 under Option A of Appendix H to the Next-STEP2 Omnibus BAA to serve as the human lander for the Artemis III mission. The purpose of this solicitation is to request proposals from industry for selection and award for the rapid development and demonstration of a Sustainable Human Landing System (HLS) from a second provider, delivering humans to the lunar surface in a subsequent Artemis mission, and with the goal of completing the required Lunar Orbit Checkout Review (LOCR) by January 2028. Additionally, NASA plans to leverage crewed lander development activities to procure and certify the design of landers capable of human-class cargo delivery.

In addition to developing a sustainable HLS, commercial and international partners will be able to leverage new capabilities developed through this initiative for the execution of multiple other missions over the coming decades, including the potential to participate in regularly recurring hardware and services procurements by NASA.

1.2 Background

1.2.1 Applicable Initiatives by NASA Organizations

To enact the direction provided in Presidential Space Policy Directive-1 for returning to the Moon, NASA is continuing to implement the Artemis program (https://www.nasa.gov/artemisprogram).

NASA is employing a capability-driven approach to its human spaceflight strategy by developing a suite of evolving capabilities that provide specific functions to solve exploration challenges. These investments in initial capabilities are to be continuously leveraged and reused, enabling more complex operations over time and exploration of more distant solar system destinations. While NASA expects to utilize commercial lander services available in the near term for some early robotic missions, NASA also recognizes the need to foster the development of expertise and technologies required for sustainable human-scale landing systems. In addition, NASA understands that investments by the private sector are expected to grow as market opportunities are identified and activities expand from science and exploration to include resource utilization to the benefit of both public and private sectors.

1.2.2 Human Landing System Concept of Operations

Within Attachment A01, Sustained Phase HLS Concept of Operations (HLS-CONOP-006) describes an approach for the SLD crewed demonstration mission.

The scope of this mission is to demonstrate:

- Aggregation of HLS elements
- HLS docking and transfer of crew to HLS
- Lunar surface landing near the South Pole
- Lunar surface extra-vehicular activity (EVA)
- Return of crew and materials from the surface and transfer from HLS

The design, development, test, and evaluation (DDT&E) of the HLS will be led by the Contractor(s). The requirements and operations concept for the overall HLS will be managed by NASA.

1.2.3 Future Exploration Activities

NASA envisions that the HLS capability as demonstrated in the crewed demonstration mission to the lunar surface will be a sustainable transportation system that will enable frequent access to the lunar surface. NASA intends for public and private investments in lunar exploration capabilities to eventually expand to include surface elements necessary to support prolonged human exploration in order to accomplish increasingly advanced exploration goals, including a human mission to Mars.

1.3 Human Landing System Acquisition Strategy

1.3.1 Acquisition Strategy Overview

To ensure the opportunity for competition for sustainable human lunar landing services in the future, NASA has approved the following acquisition strategy:

- Awarded and currently being executed
    - NextSTEP-2 Appendix H, Option A: uncrewed demonstration landing and crewed demonstration landing for an initial capability
    - NextSTEP-2 Appendix N: Sustainable HLS studies and risk reduction
- Near-term acquisition activities
    - NextSTEP-2 Appendix H, Option B: crewed demonstration landing for a sustaining capability
    - NextSTEP-2 Appendix P, Sustaining Lunar Development (this acquisition). Uncrewed demonstration landing and crewed demonstration landing for a 2nd HLS provider of a sustaining capability.
- Future acquisition activity
    - Sustaining Lunar Transportation (SLT): Acquisition focused on recurring services

In accordance with the instructions set forth below in this Broad Agency Announcement (BAA), NASA will determine whether to award Options (see Table 1: CLIN 1 Structure below). It is NASA's intent to transition between the Base period and subsequent Option periods without any break in Contractor

performance. The decision to award Options (formally authorize work initiation) rests solely with the Government, and no guarantee is made that an option will be awarded even though the contract will cite a value for the effort.

While NASA reserves the right to change its HLS acquisition strategy at any time, to include selecting for award one, multiple, or none of the proposals received. NASA intends to award one contract subject to the availability of funds; and either at contract award or later, exercise Options for that Contractor. Proposals shall include a firm-fixed-price (FFP) for the Option periods.

1.3.2 Definitions Relevant to SLD Scope of Work

Definitions for the constituents of HLS scope as identified in the figure below are provided in the SOW.

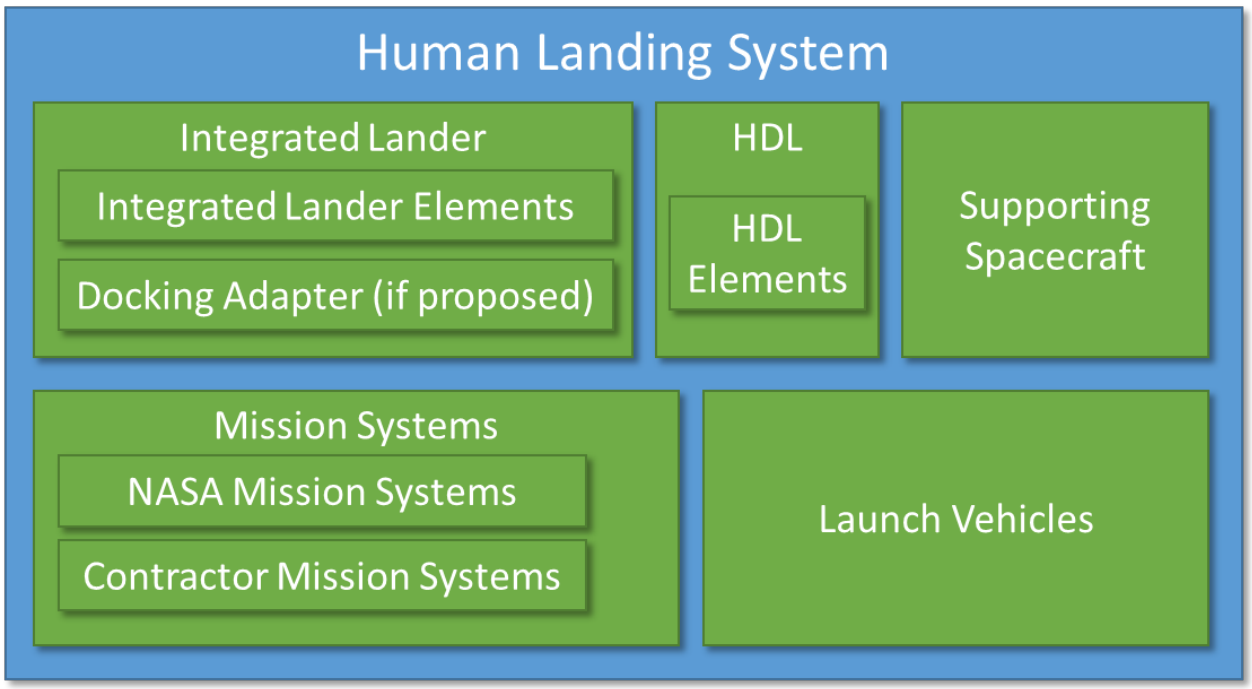

Figure 1: HLS Scope

When used within this document, the definitions provided in SOW section 2.1 apply.

1.3.3 Overview of Contract Periods of Performance

NASA has structured this solicitation by CLIN as shown in the table below and described in detail in the SOW, Section 2.

Table 1: CLIN Structure

CLIN:	Title:	Period of Performance:	Dependencies:
Base CLINs			
001	HLS Integrated Lander Design, Development, Test and Evaluation (DDT&E) through PDR	ATP* thru PDR+30D	None
002	IDIQ – Special Studies and Tasks	ATP thru End of Contract	None
Option CLINs			
Integrated Lander Continued DDT&E			
003	Integrated Lander Through CDR	PDR+30D thru CDR+30D	Successful completion of PDR
004	Integrated Lander Through DCR	CDR+30D thru DCR+30D	Successful completion of CDR
005	Integrated Lander Through Crewed Demonstration Sortie Mission	DCR+30D thru End of Contract	Successful completion of DCR
Human-class Delivery Lander (HDL) DDT&E			
006	HDL DDT&E through PDR	ATP-ATP+2yr thru HDL PDR+30D**	Award of CLIN 001
007	HDL DDT&E Through CDR	HDL PDR+30D thru HDL CDR+30D	Successful completion of HDL PDR
008	HDL DDT&E Through DCR	HDL CDR+30D thru HDL DCR+30D	Successful completion of HDL CDR

*For proposal preparation purposes only, Offerors should assume an ATP (i.e., contract award date) of May 23, 2023.

**NASA may opt to exercise CLIN 006 at any time between ATP and up to two years after ATP. For its proposal, Offeror should assume this CLIN is exercised at ATP for CLIN 001.

The Option CLINs will be incorporated into the contract at the time of contract award; however, the decision to exercise one or more of these CLINs (i.e., formally authorize work initiation) will be made in accordance with the FAR, and criteria set forth in this document and/or otherwise provided by NASA to the Contractor(s) at a future date. Plainly stated, incorporation of a FFP for Option CLINs at the time of contract award does not guarantee exercise of the Options cited in the contract.

Note that for many CLINs, the period of performance duration is dependent on Offeror-proposed dates for key milestones.

Note that while SLD includes HDL CLINs through DCR, performance of a mission to deliver Human-class Cargo to the lunar surface is not a requirement of this solicitation. Any future Human-class Cargo missions would be procured via a separate acquisition.

The contract has a potential five (5) year period of performance culminating in a crewed demonstration mission to certify the design and the Contractor. Anticipated contract period of performance will be May 2023 - May 2028, if all Options are exercised.

Design Reference Missions (DRMs). The HLS Conops documents (Attachment A01) outline the scope of several DRMs. Offerors are required to account for the following DRMs in accordance with the SOW and provisions in this BAA when proposing for the defined CLINs:

- DRM-001 Polar Sortie Mission
- DRM-001b Non-Polar Sortie Mission Variant
- DRM-002 Polar Excursion Mission
- DRM-C-001 Integrated Cargo Delivery Mission
- DRM-C-002 Offloaded Cargo Delivery Mission

The Crewed Demonstration Sortie Mission, to be proposed under CLINs 001, 003, 004, and 005, shall meet the minimum requirements in Attachment F (Requirements) associated with DRM-001. Designs for the Crewed Demonstration Sortie Mission that, in addition to meeting the requirements for DRM-001, also meet a subset or all requirements associated with DRM-002 may be evaluated more favorably. For Crewed Demonstration Sortie Mission designs that do not meet all requirements associated with DRM-002, Offerors shall propose a variant that does meet these requirements, with additional design work through DCR (above and beyond the work already proposed as part of the Crewed Demonstration Sortie Mission) to be proposed under CLINs 001, 003, and 004. At DCR NASA will certify the design for both the Crewed Demonstration Sortie Mission as well as any DRM-002 variant.

Additionally, Offerors shall assess the performance of their proposed Crewed Demonstration Sortie Mission design against the DRM-001b Non-Polar Sortie Mission Variant as described in Section 4.4.3.1 Technical Focus 1: Technical Design Concept below. While performance against this variant will not be evaluated negatively, designs that demonstrate flexibility and added margin against the non-polar scenarios may be evaluated more favorably.

The Lunar Surface Habitat and the Lunar Pressurized Rover are provided as simple, non-binding examples of Integrated Cargo and Offloaded Cargo throughout this solicitation. These examples have been assumed to aid in illustration of the two cargo variants, DRM-C-001 Integrated Cargo Delivery Mission and DRM-C-002 Offloaded Cargo Delivery Mission, which is work to be proposed under CLINs 006, 007, and 008.

1.3.4 Sustaining Lunar Transportation (SLT) Services

NASA intends to separately procure transportation between Gateway and the lunar surface as commercial space transportation services. NASA estimates that it will require such services approximately once per year for a period of ten years.

1.3.5 SLD and Appendix H

One of the goals for this procurement is to support competition and the potential for redundancy for sustainable human lunar lander capabilities in advance of NASA's future SLT procurement. To effectuate these goals, NASA is executing this SLD procurement under the authority of FAR 6.202(a) as a full and open competition after the partial exclusion of one source, Space Exploration Technologies Corp. (SpaceX). NASA currently has a contract with SpaceX for the development and demonstration of a human landing system that meets NASA’s initial lunar lander requirements ("Appendix H contract"). Within the Appendix H contract is "Option B," a scope of work to evolve this initial lander capability to meet NASA's sustaining lander requirements. While NASA has excluded SpaceX from being a prime

Contractor under the SLD procurement, SpaceX may otherwise participate (e.g., as a launch provider) on another Offeror's team.

2 Funding Opportunity Description

2.1 Description of Solicitation Topic

This Appendix P acquisition seeks a FFP, milestone-based proposal to enable rapid development and a crewed flight demonstration of an HLS.

2.2 General Information:

- **Agency:** National Aeronautics and Space Administration
- **Announcement Title:** NextSTEP-2 BAA, Appendix P: Sustaining Lunar Development
- **Omnibus BAA:** NextSTEP-2, BAA NNH16ZCQ001K
- **Responsible Office:**
  Exploration Systems Development Mission Directorate
  NASA Headquarters
  300 E ST SW
  Washington, DC 20546-0001
- **Point of Contact:**
  Ms. Stacey Hadavi
  Contracting Officer, Human Landing System
  NASA Marshall Space Flight Center
  MSFC, AL 35812
  E-mail: stacey.e.hadavi@nasa.gov
- **Inquiries: Due September 30, 2022, 3:00 PM CT.** Offerors may electronically submit written questions requesting clarification of solicitation requirements by sending an email to HQ-HLS-BAA@mail.nasa.gov. For inquiries to which NASA elects to respond, NASA responses will not contain evaluations, opinions, or recommendations regarding any suggested approaches or concepts. Only questions transmitted electronically may receive a response. Information provided with each question should include the document name, document date, specific page, paragraph, clause, or other definitive citation requiring clarification.
- **Optional GFP Agreement (OGFPA) and Government Task Agreement (GTA) Requests:** All draft Agreements that are proposed to become a part of the Offeror's proposal shall be received by the HLS Program POC, Don Krupp, at don.krupp@nasa.gov, no later than 11:00 PM CT on September 26, 2022. For purposes of proposal submittal and evaluation, draft Agreements received by NASA after this date and time may be discarded entirely by NASA at its discretion. The HLS Program POC will facilitate Offeror discussions with NASA Centers with the goal of getting concurrence on the required content within these documents, including signatures from Center representatives, by October 10, 2022. The Contracting Officer will notify Offerors of the HLS Program's final decisions for the purposes of SLD proposals and send the tentative agreements by October 24, 2022. NASA does not guarantee the disposition of any OGFPA or GTA requests received by NASA after the due dates indicated above.
- **Tangible Property derived from the CLINs and/or DPDs**
  Mockups, training systems, and any other tangible property fabricated and/or manufactured by the Contractor for the Matrix of Contract Line Item Numbers (CLINs) will be considered

Contractor-owned property. NASA will not take ownership or title to this property through any CLIN deliveries specified in Attachment H, Data Procurement Document (DPD). Any such mockups, to include computers and/or displays, training systems, and other tangible property that are located at any NASA Center, facility, or installation will remain the property of the Contractor. The Contractor will be responsible for the upkeep and maintenance of the hardware and training systems. Upon completion or termination of the contract, the Contractor will also be responsible for all costs associated for the movement and removal of Contractor-owned property from NASA Centers.

- **Proposals: Must be received by the Government no later than 3:00 PM CT on November 15, 2022.**

3 Eligibility Information

This solicitation is open to non-Government U.S. institutions (companies, universities, nonprofit organizations), excluding SpaceX as noted in Section 1.3.5 above. Foreign institutions, NASA civil servants, Jet Propulsion Laboratory (JPL) employees, national laboratories, and Federally Funded Research and Development Centers (FFRDCs) shall not be proposed as a Prime Contractor on any effort associated with this announcement. Foreign institutions, national laboratories, and FFRDCs may participate as a team member. Offerors are advised that performance of Appendix P will be subject to the eligibility and domestic sourcing requirements of both the Commercial Space Act of 1998 and the National Space Transportation Policy as effectuated through contract H clause – Domestic Source Requirements (as amended). In addition to this contract clause, Offerors' attention is specifically directed to sections 3.2 of the omnibus portion of this solicitation for further eligibility considerations and requirements.

4 Proposal Submission Information, Conditions, and Notices to Offerors

4.1 Introduction

The Government intends to evaluate proposals and award a contract without conducting discussions or post-selection negotiations with Offerors (except clarifications as defined in Federal Acquisition Regulation (FAR) 15.306(a)). Therefore, each Offeror shall submit only one proposal which represents its best approach to meeting the requirements of the solicitation. The Government reserves the right to conduct discussions or post-selection negotiations if the Contracting Officer later determines them to be necessary.

If unexplained discrepancies are found within an Offeror's proposal, the Government may use that as a basis for evaluating such a proposal negatively, and if the discrepancies are significant, the Offeror may be deemed ineligible for award. Offerors who take exception to any terms and conditions of this solicitation may also be deemed ineligible for award and excluded from further consideration.

The Government contemplates award of a FFP contract resulting from this solicitation.

Offerors shall disregard sections 4, 5, and 6 of the omnibus BAA; these sections of the omnibus BAA are not applicable to this Appendix. For all other sections of the omnibus BAA, where the omnibus BAA conflicts with other components of this solicitation (e.g., the model contract), the conflicting component governs (i.e., in the event of a conflict, the omnibus does not govern).

4.1.1 Use of NASA Support Contractors

The following Government support Contractors may assist NASA in evaluating Offerors' proposals in an advisory capacity only, and may provide administrative support to the selection process, but will not evaluate proposals:

Stellar Solutions

For contact information for the Contractor listed above, contact Stacey Hadavi, Contracting Officer, at stacey.e.hadavi@nasa.gov. NASA presently has organizational conflict of interest (OCI) clauses as well as proprietary data protection clauses in NASA's contract with this Contractor, and these Contractor personnel have signed non-disclosure agreements (NDAs) with NASA that cover the proposals that NASA will receive in response to this solicitation. NASA will consider submission of a proposal in response to this solicitation as an Offeror consenting to NASA's use of the Contractor listed above in the manner described above.

4.1.2 Definitions

As used in sections 4, 5, and 6 of this Appendix:

"Discussions" are exchanges with Offerors that occur after receipt of proposals but before selection that result in the Contracting Officer inviting the Offeror to revise only those specific portions of its proposal that have been identified by the Contracting Officer as open to revision.

"In writing," "writing," or "written" means any worded or numbered expression which can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

"Post-selection negotiations" are exchanges with Offerors who have been selected for potential contract award that do not contemplate or result in material proposal revisions.

"Proposal modification" is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

"Proposal revision" is any change made by the Offeror to its proposal after the solicitation closing date that occurs as a result of discussions or post-selection negotiations in accordance with Section 4.2.2. of this solicitation.

"Time," if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next business day. Similarly, if the NASA Center where a submission is due, is closed for all or part of the last day, the period extends to the next day on which the NASA Center is open.

4.1.3 Solicitation Contents

This solicitation is comprised of this Appendix P solicitation, the Next-STEP2 omnibus BAA, and all other solicitation attachments specified below in Table 2.

Table 2: Solicitation Attachments

Solicitation Attachment			Template Provided by Government for Fill-in by Offeror	Incorporation into Contract if Offeror Receives Award
A	**Reference Library**		No	No
	01	**HLS Concept of Operations**		
	02	**Relevant standards and documents**		
	03	**Interoperability standards**		
	04	**White Papers**		
	05	**HLS-VV-002 Verification Guidebook**		
	06	**HLS-MOA-001: HLS Software IV&V Project Execution Plan**		
	07	**JSC-35191: Artemis Flight Operations Standards**		
	08	**US Radiation Test Facilities Availability**		
	09	**Rocket Propulsion Test Capability**		

	10	**NASA Center Capabilities**		
	11	**ACD-52105: Artemis Campaign Development Medical Operations Requirements Document (MORD)**		
B	**NASA Points of Contact**		No	No
C	**Reserved**		-	-
D	**Corporate Contribution Worksheet**		Yes	Yes
E	**Model Contract (Including SF33)**		Yes	Yes
F	**HLS Requirements** - **HLS-RQMT-006 Integrated Lander SRD;** - **HLS-RQMT-007 HDL SRD;** - **EVA-EXP-0067 HLS-xEVA IRCD;** - **EVA-EXP-0070 ANX-02 HLS-EVA Compatibility IRD - Sustained;** - **EVA-EXP-0070 HLS-EVA Compatibility IRD** - **EVA-EXP-0070 ANX-03 HLS-EVA Compatibility IRD – HDL** - **GP 10031-01 Gateway to HLS IRD;** - **GP 10045-01 Gateway to Visiting Vehicles RF IRD Annex 1: HLS;** - **GP 10046-01 Gateway to Lunar Systems RF IRD Annex 1: HLS;** - **HLS-IRD-004-01 HLS-Mission Systems IRD;** - **HLS-IRD-007-01 HLS GFP IRD;** - **HLS-IRD-008 HLS-LSA IRD;** - **HLS-IRD-010 HDL to Cargo IRD**		No	Yes
G	**Statement of Work (SOW)**		No	Yes
H	**Data Procurement Document (List of Data Requirement Deliverables (DRDs))**		No	Yes
I	**Government Furnished Equipment/Property (GFE/GFP) List**		Yes	No
J	**Design and Performance Metrics Tables**		Yes	No
K	**Optional GFE/GFP Agreement Template**		Yes	No
L	**Reserved**		-	-
M	**Reserved**		-	-
N	**Reserved**		-	-
O	**Milestone Acceptance Criteria and Payment Schedule**		Yes	No
P	**Pricing Template**		Yes	No
Q	**Government Task Agreement Template**		Yes	No

Access to export-controlled information that is a part of this solicitation can be obtained by submitting a written request to the Contracting Officer, Stacey Hadavi, at stacey.e.hadavi@nasa.gov. Access to these materials will be granted solely for the purpose of preparing a proposal under this solicitation.

4.2 Proposal Submission

This section contains instructions to Offerors for successful submission of their proposals. Non-conformance with these instructions may result in an unfavorable evaluation of the proposal or, where indicated, may render a proposal unawardable.

4.2.1 Summary of Required Content and Proposal Organization

The required content, organization, and required file types for elements of Offerors' proposals is summarized in Table 3 below.

Table 3: Summary of Required Proposal Content

Required Proposal Content		Page Limit			Incorporation into Contract at Award
Title Page		1			No
Executive Summary		3			No
Volume I: Technical		55			Yes
Volume II: Price		Offeror shall use the provided template only (Attachment P)			No
Volume III: Management		20			Yes
Volume IV: Proposal Attachments		No total limit			See below
Volume IV Proposal Attachment (PDF format unless otherwise noted)		**DRD #**	**Template Provided by Government for Fill-in by Offeror**	**Incorporation into Contract at Award**	**Page Limit**
1	**Reserved**	-	-	-	-
2	**Domestic Source Certification**	-	No	Yes	-
3	**Corporate Contribution Worksheet and Narrative (MS Excel), if proposed**	-	Yes (Att D)	Yes	-
4	**Small Business Subcontracting Plan**	-	No	Yes	-
5	**Collaboration Plan**	-	No	No	-
6	**Government Task Agreement(s) (GTAs) and/or Optional GFP Agreement(s) (OGFPAs), if proposed**	-	Yes (Att Q, K)	No	-

	7	**Insight Implementation Plan**	MA-001	No	Yes	-
	8	**Verification, Validation, and Certification Plan**	SE-002	No	Yes	-
	9	**Design and Performance Metrics Tables (MS Excel)**	-	Yes (Att J)	No	-
	10	**Safety and Mission Assurance (SMA) Plan**	SA-002	No	Yes	-
	11	**Past Performance Narrative**	-	No	No	15
	12	**Review Plan**	MA-002	No	Yes	-
	13	**Milestone Acceptance Criteria and Payment Schedule (MS Excel)**	-	Yes (Att O)	Yes	-
	14	**Reserved**	-	-	-	-
	15	**GFP List (MS Excel)**	-	Yes (Att I)	Yes	-
	16	**Data Rights *Assertion Notice,* corresponding narratives, and evidence**	-	Yes (Att E, 52.227-14 (f)(5))	Yes (*Assertion Notice* only)	-
	17	**Organizational Conflicts of Interest (OCI) Plan**	MA-007	No	Yes	-
	18	**Integrated Operations Training**	OP-002	No	No	-
	19	**Integrated Master Schedule (IMS) (MS Project and Adobe PDF)**	MA-003	No	Yes	-
	20	**Project Management Plan**	-	No	Yes	35
	21	**Mission Operations and Mission Systems Plan**	OP-003	No	Yes	-
	22	**Risk Management Plan**	MA-004	No	Yes	-
	23	**Contractor's Concept of Operations**	SE-009	No	Yes	-
	24	**Reserved**	-	-	-	-
	25	**Signed Model Contract**	-	Yes (Att E)	Yes	-
	26	**Responsibility Determination Information**	-	No	No	-

	27	**Proposed Alternate Standards**	-	-	-	-
	28	**Human Systems Integration (HSI) Plan**	HS-003	No	Yes	-
	29	**HLS Integrated Lander System Specification**	SE-001	No	Yes	-
	30	**Software Verification, Validation, and Certification Plan**	SW-001	No	Yes	-
	31	**Assembly, Integration, and Test Plan**	SE-005	No	Yes	-
	32	**Software Plan (SP)**	SW-002	No	Yes	-
	33	**Risk Reports**	MA-005	No	Yes	-
	34	**Expenditure Profile (MS Excel [preferred] and/or PDF acceptable)**	-	No	No	-
	35	**Key Facilities and Equipment**	-	No	No	-
	36	**Reserved**	-			-
	37	**Reserved**	-	-	-	-
	38	**Reserved**	-	-	-	-
	39	**Reserved**	-	-	-	-
	40	**Reserved**	-	-	-	-
	41	**HLS Human-class Lander (HDL) System Specification**	SE-008	No	Yes	-
	42	**Reserved**	-	-	-	-
	43	**Technology Readiness Level Report**	DE-005	No	No	
	44	**System Security Plan**	-	No	Yes	-
	45	**Food Systems Plan***	HS-005	No	No	-
	46	**Medical Kit Plan***	HS-006	No	No	-
	47	**Reserved**	-	-	-	-
	48	**Lunar Orbit Checkout Plan**	OP-004	No	No	-

* If Offeror opts for NASA to provide as GFP, this deliverable is not required

4.2.2 Submission Instructions

Offerors shall submit their proposal in accordance with the following requirements.

Electronic Submission: Offerors shall submit their proposal in electronic form **only**. Hard copies will not be accepted. The Government anticipates viewing the electronic submittals with the following computer software and hardware: (1) PC-compatible systems, (2) Windows 10 operating system, (3) Adobe Reader DC, and (4) Microsoft Office 2016. To enable the Government to successfully view the proposals electronically, the Offeror shall submit its proposal in searchable Adobe Portable Document File (PDF) except where otherwise specified in Table 3.

The offeror shall submit its proposal in accordance with the *Electronic Submission of Proposals – Proposal Marking and Delivery Through NASA's EFSS Box (NOV 2021)* provision in the model contract, to the Contracting Officer, Stacey Hadavi, at stacey.e.hadavi@nasa.gov. The Offeror shall follow the instructions found at https://www.hq.nasa.gov/office/procurement/other/EFSS-Box-Offeror-Proposal-Submission-Instructions.pdf.

Prior to the submission of proposal files, Offerors interested in submitting a proposal in response to this solicitation should notify Stacey Hadavi of their intent to submit a proposal at least 48 hours prior to the intended submission date, at the following email address: stacey.e.hadavi@nasa.gov. The Offeror shall courtesy copy (cc) HQ-HLS-BAA@mail.nasa.gov on this communication.

International Traffic in Arms Regulations (ITAR)/ Export Administration Regulations (EAR) Data: ITAR/EAR data is allowed to be sent through EFSS Box, if properly labeled as such (see pages 29-30 of the NASA Guidebook for Proposers, "Responding to a NASA Funding Announcement" at https://www.hq.nasa.gov/office/procurement/nraguidebook/proposer2018.pdf) and encrypted in accordance with FIPS 140-2 and as defined by appropriate Federal regulations.

Solicitation Closing Date and Time: The Offeror shall submit its proposal via EFSS Box and **must be received** by the Government no later than 3:00 PM CT on November 15, 2022. Offerors are solely responsible for ensuring timely delivery of their proposal, including any modifications.

Proposal Modifications: The Government will only accept proposal modifications that meet one of the following conditions: (1) Proposal modifications received by the Government at any time before the solicitation's closing date and time; (2) Proposal modifications submitted in response to a solicitation amendment and received by the Government at any time before the amendment's closing date and time; or, (3) Proposal modifications received by the Government any time after the solicitation's closing date and time, but before award, that are submitted by the Offeror, and accepted at the unilateral discretion of the Contracting Officer.

Proposal Revisions: The Government will only accept proposal revisions that are requested by the Contracting Officer and received by the Government by the time and date specified by the Contracting Officer.

Late Proposals: Any proposal, proposal modification, or proposal revision received by the Government at the designated location after the exact time specified for receipt of offers is "late" and **will not be considered** unless: (1) it is received before award is made; (2) the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and (3) if the Government, at its sole discretion, determines that the proposal was received at the initial point of entry to the Government infrastructure not later than 5:00 PM CT **one calendar day prior to the date specified for receipt of proposals.**

Partially received Proposals: In the event that the Contracting Officer determines that an Offeror has submitted a portion of its proposal on-time and that other portions of its proposal are considered by the

Government as “late,” for selection and award purposes, the Government will evaluate only those portions of the proposal that were not late and will discard the late portions and not use them in any manner for selection purposes.

Emergency Interruption of Government Processes: If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received by the exact time specified in the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first working day on which normal Government processes resume.

Proposal Withdrawal: If received by the Contracting Officer at any time before contract award, proposals may be withdrawn by written notice. To withdraw a proposal, an individual authorized to bind the Offeror must contact the Contracting Officer in writing and explicitly request a withdrawal. Withdrawals are effective upon receipt of notice by the Contracting Officer.

Unsolicited Components: Offerors shall not include any unsolicited appendices or attachments with their proposals. The Government will discard any unsolicited components of proposals and will not consider them during its proposal evaluation.

Offer Expiration: Offeror’s proposals shall be valid for no less than one hundred and eighty (180) days from the required submission date. The award date of this procurement is planned to be in May 2023.

4.2.3 Format

Except as noted in Table 3, the Offeror shall comply with the proposal formatting requirements below. Offerors that do not comply with one or more of the formatting requirements of this section may be deemed ineligible for award.

Page Limits: Offerors shall comply with the page limitations specified in Table 3. Pages submitted in excess of those limitations will not be evaluated by the Government and will be deleted. Title pages are not included in page limits. Tables of contents at the beginning of Volumes I and III will be excluded from page counts. Offerors may provide graphics or tables on 11" x 17" pages, which will count as two pages. Volume II: Price is not page limited; however, this volume is to be strictly limited to price information as filled in by the Offeror in the Government-provided Pricing Template. Information that can be construed as belonging in one of the other volumes of the proposal will be so construed and counted against that volume’s page limitation. If the Government requests proposal revisions, separate page limitations will be specified in the Government's request for that submission.

Fonts: Proposal must be single-spaced, typewritten, formatted using one column, and use 12-point font. The font size for symbols in equations must be consistent with this guideline. Offerors may not use “condensed” or “narrow” font versions and may not adjust or otherwise condense a font or line from its default appearance. While text within figures and tables may use a smaller font, it must not be smaller than 10-point. Figure and table captions must follow the same font requirements and restrictions as the main proposal text. It is recommended that expository text necessary for the proposal not be located solely in figures or tables, or in their captions.

Headers and Footers: Only non-proposal material, e.g., page numbers, volume titles, disclaimers, etc., is permitted in headers and footers. Every proposal page shall indicate its proposal Volume (e.g., “Vol. I”), be numbered, and contain the Offeror’s name, solicitation number, and date.

PDF-Specific Formatting Requirements: For PDF files, the required paper size is 8.5”x11” (or 11” x 17” as described in the “Page Limits” paragraph above). Pages must have at least 1-inch (2.5 cm) margins on all sides. The Offeror shall generate “bookmarks” within each PDF file for each section and sub-section of the document. Bookmarks shall be generated based on indexed entities appearing in the document

table of contents. The Offeror has the option of generating "thumbnails" within the PDF files as well. The minimum requirement for hypertext links is a proposal volume table of contents with links to each section of the volume. The Offeror shall set all security options in each PDF file to "allowed." External hyperlinks are not allowed and will not be evaluated if included. Hypertext links shall be the same minimum font size. The preferred method of implementing hyperlinks is to indicate the hyperlink by blue font color and establish the hypertext in Acrobat with "invisible rectangle" with "no outline." All text, including table and figure identifiers, shall be indexed and 100% searchable text.

Excel Spreadsheet Requirements: Some of the Government-provided fillable templates for Offerors' proposals are in MS Excel spreadsheet format. These spreadsheets shall be populated by Offeror and submitted in MS Excel format, not in a scanned MS Word or Adobe PDF file. Spreadsheets shall not be "read only," "locked," or protected in a manner that would prevent an evaluator from manipulating the data as necessary to complete the evaluation.

Units of Measurement: Units must be reported in the International System of Units (SI), defined by ANSI/Institute of Electrical and Electronics Engineers (IEEE) Standard 268.

Reference to Outside Materials: Proposals may not include references to materials outside the proposal (e.g., published articles and sites on the internet) for information or material needed to either complete or understand the proposal.

Language and Currency: Offerors shall submit proposals in response to this solicitation in English and in U.S. dollars.

Restriction on Disclosure and Use of Data: Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall:

Mark the title page with the following legend:

> This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed -- in whole or in part -- for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this Offeror as a result of -- or in connection with -- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [*insert numbers or other identification of sheets*]; and

Mark each sheet of data it wishes to restrict with the following legend:

> Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

4.3 How the Acquisition Strategy Affects Required Proposal Content

4.3.1 General Proposal Instructions

NASA will not take ownership of the HLS except as authorized by the contract.

The Offeror's proposal will be evaluated, in part, on its technical (Volume I) and management (Volume III) approach to design, build, certify, and operate its own unique HLS. These approaches shall acknowledge and be responsive to all of the requirements, standards, terms, and conditions contained in this solicitation. **The Offeror's proposal shall contain a complete approach and a FFP for all of the work to be performed by the HLS Contractor during the Base and Option periods.**

4.3.2 Requirements and Standards

Within Attachment F, both the Sustained Phase HLS Program SRD (HLS-RQMT-006) and the HDL System Requirements Document (HLS-RQMT-007) have multiple Appendices that reference detailed technical standards. Additionally, the SOW and DPD reference Artemis Flight Operations Standards (JSC-35191) and Artemis Campaign Development Medical Operations Requirements Document (MORD) (ACD-52105). The following standards are to be included in a standards adjudication process described below:

- Standards referenced in the following appendices of Sustained Phase HLS Program SRD (HLS-RQMT-006):
    - APPENDIX B SAFETY, RELIABILITY, AND MAINTAINABILITY STANDARDS
    - APPENDIX C HUMAN HEALTH AND MEDICAL STANDARDS
    - APPENDIX D DESIGN AND CONSTRUCTION STANDARDS
    - APPENDIX E SUB SYSTEM REQUIREMENTS
- Standards referenced in the following appendices of HDL System Requirements Document (HLS-RQMT-007)"
    - APPENDIX B SAFETY, RELIABILITY, AND MAINTAINABILITY STANDARDS
    - APPENDIX C HUMAN HEALTH AND MEDICAL STANDARDS, as applicable
    - APPENDIX D DESIGN AND CONSTRUCTION STANDARDS
- Artemis Flight Operations Standards (JSC-35191). Note that the Artemis Flight Operations Standards are only applicable to the Integrated Lander and not the HDL.
- Artemis Campaign Development MORD (ACD-52105)

These standards set forth a potential approach for how NASA would design, build, certify, and operate an HLS. These detailed standards are provided to the Offeror by NASA as a starting point for the Offeror's proposal for all work to be performed through the end of the contract. Note that within these standards, for the purposes of this solicitation, applicable standards directly referenced by the standards from the bulleted list above ("Child Standards") above are considered applicable, while references to additional standards by those referenced applicable standards are not. The Offeror's proposal shall:

(1) Demonstrate that the proposal meets or exceeds these NASA standards;

(2) Employ an alternative approach as adjudicated with the HLS Program during execution of Base period contracts of Appendix H (Exception: this option is not available for Appendices C and E of HLS-RQMT-006 or Appendix C of HLS-RQMT-007); or

(3) Employ another alternative approach to the standards that the Offeror asserts is equivalent in outcome, with a thorough explanation of such equivalency and a rationale in support of this approach in lieu of NASA's specification (i.e., a "meets the intent of" approach).

Offerors shall identify each NASA standard for which it proposes to use an alternative approach (options 2 and 3 above), for the development of their Integrated Lander and HDL. The Offeror shall incorporate any such "alternate standard" approach throughout its proposal and assume NASA and the Offeror will adjudicate and reach final agreement on all Offeror-proposed alternate standards during the Base period.

Within the requirements (functional, performance, and interface) and standards of Attachment F, for "TBR" (To Be Resolved) values, the Offeror should assume the TBR value. Where necessary to enable

establishing a firm-fixed price, Offeror shall provide assumptions, including rationale, used regarding TBRs.

4.3.3 xEVAS Suits Approach

Due to the current on-going xEVAS Task Order competitive process, Offerors shall engage with NASA points of contact in the HLS and **E**VA **H**uman Surface Mobility **P**rograms (EHP) until the task orders are awarded regarding xEVAS hardware, interfaces, delivery dates, etc. The POCs are listed below:

Program	POC	Email
HLS	Byron Bartlow	byron.bartlow@nasa.gov
EHP	Stephanie Flint	stephanie.m.flint@nasa.gov

Once task orders are awarded, Offerors may engage with the xEVAS Artemis provider(s) as permitted by company policy and the HLS Program.

Offerors shall include the Contracting Officer and/or hq-hls-baa@mail.nasa.gov in all correspondence related to xEVAS Suits.

4.4 Required Proposal Content

The proposal shall fully demonstrate that the Offeror understands and can successfully perform the requirements of this solicitation (including, but not limited to, Attachment F – HLS Requirements) and has a thoughtful, comprehensive, and feasible approach for doing so on its proposed schedule and in accordance with its proposed milestone payment schedule. In particular, the proposal shall fully explain and demonstrate how the Offeror will successfully design and develop all aspects of its HLS, as well as how the Offeror will achieve verification of requirements for human rating for its complete HLS Integrated Lander in order to execute and successfully complete the LOCR by NASA's goal timeline of January 2028.

The Offeror's proposed approach should be specific, detailed, and contain sufficient information to clearly and completely convey the Offeror's understanding of the requirements and address the inherent risks associated with the objectives of this effort. The Offeror's proposal should comprehensively explain how the Offeror proposes to comply with the applicable requirements.

Stating that the Offeror understands and will comply with the requirements, or paraphrasing the requirements, is inadequate for purposes of proposal submission. General statements such as: "[Offeror] can or will comply with the requirements;" "Standard procedures will be used;" "Well-known techniques will be used;" or statements that paraphrase any requirement of this solicitation without further exposition will be considered inadequate and do not demonstrate or constitute compliance with this solicitation. Proposals that suffer from these flaws run the risk of being evaluated negatively by the Government.

Offerors should not assume the Government has prior knowledge of their facilities and experience. Information previously submitted through other efforts and contracts will be considered by the Government only if it is resubmitted and explained in the Offeror's proposal. The Offeror's proposal shall be assembled in a format that addresses all Areas of Focus contained within these instructions in the order they are described and requested below.

4.4.1 Title Page

In addition to any other content deemed appropriate by the Offeror (e.g., corporate graphic or logo), the Title Page of the proposal shall contain the following content:

- Full name and mailing address of the firm submitting the proposal;
- The Offeror's Commercial and Government Entity (CAGE) Code;
- The Offeror's Unique Entity Identifier (UEI);
- Date of the proposal;
- The solicitation number and Appendix to which the proposal is responding;
- The Offeror's name of the proposal or proposed project;
- Any Notice of Restriction on Use and Disclosure of Proposal Information;
- A statement that the proposal is valid for one hundred and eighty (180) days from date of submission;
- A statement that the Offeror agrees with all terms, conditions, and provisions included in the solicitation and agrees to furnish any or all items upon which prices are offered at the price set opposite each item;
- Name, title, e-mail address, and phone number of one or more individuals authorized to negotiate on the Offeror's behalf with the Government in connection with this solicitation; and
- Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority unless that evidence has been previously furnished to the issuing office.

4.4.2 Executive Summary

In addition to any other content deemed appropriate by the Offeror (e.g., corporate graphic or logo), the Executive Summary of the proposal shall contain the following content:

- An overview of the proposed effort; and
- A description of the proposal's prominent and distinguishing features

The Executive Summary shall not be marked as restricted or limited release data.

4.4.3 Volume I: Technical

The Offeror's proposal shall contain a *Volume I: Technical* describing its understanding of and approach to developing an HLS that addresses all of the technical requirements of this solicitation. Volume I shall demonstrate an in-depth knowledge of the required systems engineering processes, procedures, and tools to successfully perform the tasks on schedule, and a clear understanding of current NASA requirements, policies, and procedures affecting that task. Offerors are responsible for submitting a complete, consistent, and comprehensive technical proposal that addresses this solicitation's requirements, but shall ensure that at a minimum, the proposal addresses the following Technical Areas of Focus. NASA will assess the merit of each Offeror's proposal through these established Technical Areas of Focus. Technical Areas of Focus are not listed in order of importance. Rather, NASA will conduct a holistic assessment through these Areas as a means of evaluating the Offeror's end-to-end technical approach to design and develop an HLS capability on schedule for all design variants and complete a successful crewed demonstration of the Integrated Lander capability. Note that NASA has provided technical reference information in the attachments to this solicitation that should be taken into consideration and addressed as necessary in Offerors' proposals, including but not limited to Attachment A, Reference Library, and Attachment F, HLS Requirements.

4.4.3.1 Technical Focus 1: Technical Design Concept

Overall Design. The Offeror shall provide a detailed description of its proposed HLS design concept, including the current state of design maturity and how that design, including variants for DRM-002, DRM-C-001, and DRM-C-002, will meet the requirements as described in the SOW, the HLS Requirements (Attachment F), and other solicitation attachments. This portion of the Offeror's proposal should be consistent with, and in addition to (as necessary), Offeror's submission of its Contractor Concept of Operations (proposal Attachment 23).

At a minimum, the Offeror shall provide:

- Preliminary subsystem designs, including block diagrams and figures allowing an understanding of subsystem functions and interfaces;
- The approach to leveraging the reliability of previously demonstrated component, subsystem, and spacecraft hardware and software in support of the Offeror's proposed HLS design;
- A description of any new and modified hardware and software utilized by the Offeror's HLS designs and an assessment of the resulting risk and reliability impacts;
- Its proposed approach to communications capabilities (voice, command, data). Note that there are specific communication-related requirements contained in Attachment F, HLS Requirements. Additional information regarding potential NASA communication capabilities (i.e., Space Communications and Navigation (SCaN); Missions Operations and Communications Services (MOCS)) to be utilized may be found in Attachment A, Reference Library. The Offeror's proposed use of existing NASA communication capabilities may be achieved through one or more GTAs and consistent with NASA policy if such communications capabilities cannot or will not be able to be procured from commercial sources. Note: Offerors may plan to use any communication relay available in lunar orbit at the time of the mission.

- In its Contractor Concept of Operations (Attachment 23), the Offeror shall address:
    - Supported options for aggregation of HLS modules or components and for docking to support crew transfer;
        - NASA anticipates the launch of crew via Orion to be dependent upon a successful checkout of HLS Integrated Lander modules or components. Include a description of proposed scope of this checkout activity, in accordance with the Lunar Orbit Checkout Review as described in the SOW, including estimated timing;
        - Include accommodations for Orion launch delays and highlight HLS sensitivities and constraints during this operational period;
        - Include planned trajectories and timing from launch to arrival for aggregation for each separately launched module.
    - Cabin nominal operating atmosphere (pressure and oxygen concentration) for all mission phases;
    - Scope of supported autonomous operations;

  - Scope of supported or required crewed operations, including approach for providing the crew with direct viewing of the landing site during landing and capability to adjust the landing site location (Note that NASA will select the target landing location);
  - Dust mitigation strategy for habitable volume;
  - Dust mitigation strategy for equipment deployed near the lander. The dust environment generated by plume surface interaction during lander ascent could negatively impact deployed science equipment that remains on the surface. For sustained phase missions, NASA anticipates having pre-deployed assets near the landing site, including assets that the crew will live in during the surface mission, therefore HLS-induced damage to these assets must be managed;
  - Offeror's plans for disposal of non-reusable Elements, or plans for how reusable Elements, if proposed, between HLS surface missions will be dispositioned; a "reusable" Element is defined as an Element that can be used to support multiple round-trip transportation missions between NRHO and the lunar surface.
  - Logistics delivery approach (refer to HLS-PAP-019 HLS GFP Cargo Operations within Attachment A04, White Papers)
- Operational features and limitations, including those related to HLS survival and operations in sunlight/eclipse, for all mission phases;
- Overall approach to addressing Safety and Mission Assurance standards referenced in Attachment F;
- Overall approach to addressing Health and Medical standards referenced in Attachment F;
- Propellant considerations, such as storability, safety, maintainability, in-space refueling capability. Note that if an Offeror desires to incorporate refueling in any capacity into its HLS design concepts, it should do so within its Contractor Concept of Operations (proposal Attachment 23)
- Mass and power estimates through all mission phases, including proposed margins and mass growth assumptions based on preliminary master equipment and power equipment lists for the Offeror's proposed spacecraft design concepts. Mission performance information including a summary of propulsive events through all mission phases and select technical performance metrics identified in Attachment J. Offerors should provide filled-in versions of Attachment J, Design and Performance Metrics, with their proposals. When competing the tab for DRM-001b, reference the six (6) non-polar sites identified in requirement HLS-S-R-0357 of HLS-RQMT-006. Please use Attachment J, HLS-PLAN-008, TPM Plan, for additional guidance;
- Mass considerations for returning from the surface, including;
  - Items planned to be left on surface; and
  - Accommodations (e.g., mass allocation, volume) for return of samples and equipment/experiments from the surface;
- Abort-related features and limitations; and
- Features, capabilities, and limitations unique to the cargo variant including, but not limited to:
  - Cargo deployment capabilities, including min/max distance offloaded from lander edge

  - Cargo launch approach
  - Details of how the cargo would be integrated with the Offeror's HDL for earth launch, aggregation if applicable, through lunar landing
- Support for Utilization (e.g., power for Utilization payloads, data interfaces, data storage, etc.)
- IVA suit considerations.

The HLS Requirements (Attachment F) specify both "threshold" and "goal" values for several of the functional performance requirements. Proposals shall meet all specified thresholds. Offerors are advised that proposals that exceed one or more thresholds, and/or meet one or more goals, may be evaluated more favorably if the Offeror's proposal otherwise demonstrates a feasible approach that does not compromise other elements of the Offeror's approach to meeting NASA's objectives and performance requirements.

Excess Capabilities. If proposed, the Offeror shall specifically identify and describe each capability or design feature that exceeds the HLS requirements as specified in this solicitation. Such capabilities, if proposed, including excess capability planned for both NASA and Offeror's commercial use, shall be included within the Offeror's proposed FFP, as well as its Integrated Lander and HDL System Specifications (Attachments 29 and 41, respectively) as applicable. The Government will evaluate such capabilities for feasibility; impacts and risks to DDT&E, mission integration, and operations; and value to the Government for a robust design and an operational concept that increases reliability, lowers risks, or enhances operational flexibility and/or mission performance.

For the requirements listed below, which include both threshold and goal values, proposed capacity exceedances of the threshold value up to the goal value shall be for NASA's use during the crewed demonstration mission:

- HLS-S-R-0307 Delivery from Earth to NRHO [DRM-H-001] from HLS-RQMT-006
- HLS-S-R-0318 HLS Delivery from NRHO to Lunar Surface [DRM-H-001] from HLS-RQMT-006
- HLS-S-R-0319 Delivery from Lunar Surface to NRHO [DRM-H-001] from HLS-RQMT-006
- HLS-GFP-074 Utilization/Science GFP Total Power Wattage from HLS-IRD-007-01
- HLS-GFP-088 External Mounted Utilization/Science GFP from HLS-IRD-007-01

For exceedances beyond the goal value, Offerors may propose that capacity as available for NASA use or as planned for commercial use, in accordance with Attachment E, Model Contract, and document the allocation of the exceedence, by filling in Attachment J, Requirements Mapping – HLS tab, columns R and S, and including as part of proposal Attachment 9, Design and Performance Metrics Tables. Note: If awarded, the allocation of the exceedence will be documented as an attachment to the contract upon award.

Offerors are notified that the Government may evaluate the Offeror's proposal either more positively or negatively in light of its assessment of the above-specified effects of such proposed excess capabilities. The Offeror shall provide strategies for addressing how any such proposed augmented capabilities will not impact the feasibility of or otherwise introduce unnecessary risk to its design, development, mission integration, or operations for meeting NASA's stated objectives and performance requirements.

Safety and Mission Assurance. In proposal Attachment 10, Safety and Mission Assurance Plan, the Offeror shall propose its safety and mission assurance approach and processes to support decision-making aimed at ensuring human safety and mission success when performing contract requirements. The Offeror shall describe its approach to developing safety analyses, generating reports, and implementing any other safety and mission assurance analysis products. The Offeror shall describe its internal process and how it will support the Government process for reviewing and accepting safety and mission assurance products, such as use of safety review panels, independent review teams, and peer reviews. The Offeror shall describe its approach to minimize the total system safety risk associated with their design that identifies and demonstrates an understanding of the residual risk to the public, crew, personnel, and property throughout the contract period of performance.

Approach to Integration and Interface. The Offeror will describe its design solution to address the achievement of required HLS interfaces.

The Offeror shall propose a design that enables Integrated Lander docking to transport the crew from and to Gateway, as well as support in-flight rescue docking with Orion. For docking with the Gateway, Offerors shall include development of an International Docking System Standard (IDSS) and Gateway Docking System Standard (GDSS)-compliant approach for successful docking. If a docking adapter is proposed, the Offeror's approach shall include delivery and attachment of the adapter to Gateway. For in-flight rescue docking with Orion, Offerors shall include development of a passive docking system or equivalent approach for successful docking, as well as delivery and attachment of the system on HLS.

Contractor designs that employ the use of a docking adapter shall include the capability to remove the adapter from Gateway at the conclusion of each mission so that another Contractor's HLS is able to dock with Gateway per the interface described in the HLS-Gateway IRD.

The Offeror shall address how its design will support EVA considerations, including but not limited to:

- Operational concept for EVA egress/ingress on the surface (including EVA hatch size and location);
- Features and limitations to support multiple EVAs within a mission (including recharging suit between EVAs, number of pressure cycles supported, etc.); and
- Features and limitations to support science activities and lunar sample return, including available power and any pressure or thermal control features.

For HDL designs, the Offeror shall describe its approach to providing services to the cargo from earth launch through lunar offloading.

Approach to Cybersecurity. In proposal Attachment 44, System Security Plan, and corresponding related proposal volumes and attachments (e.g., the Offeror's IMS), the Offeror shall demonstrate a thorough, thoughtful, and comprehensive approach to achieving the cybersecurity required of all of its covered Contractor systems as defined in the Statement of Work. The Offeror's selection of security and privacy controls that it has and/or will implement on each covered system shall demonstrate that the Offeror fully understands, and has an actionable plan to achieve, the Government's required level of cybersecurity for all phases of contract performance.

The selection and implementation of more controls overall does not automatically render a proposal eligible for a more favorable evaluation; rather, NASA will qualitatively assess the controls and other measures proposed by the Offeror, including all forward plans and provided rationale. A System Security

Plan and an overall proposed approach to achieving cybersecurity may be evaluated more favorably by NASA if the proposal demonstrates: the Offeror's understanding of potential threats during all phases of performance; the Offeror's comprehensive approach to preventing, mitigating, and responding to cybersecurity risks during all phases of performance, including operational and mission phases; full compliance with all applicable contract clauses, including FAR 52.204-21, NFS 1852.204-76, and the section H clause, *Cybersecurity and Project Protection*; and/or a commitment to appropriately incorporating cybersecurity considerations into all of its hardware, software, and other covered Contractor systems. Approaches to cybersecurity that demonstrate a lack of expertise, knowledge, or current and planned actions to achieve the Government's required level of cybersecurity may be evaluated more negatively overall.

4.4.3.2 Technical Focus 2: Development, Schedule, and Risk

Complete Development Approach. Consistent with and in addition to the Offeror's Integrated Master Schedule (proposal Attachment 19), the Offeror shall provide a description of its approach and methodology to maturation of its HLS design, including progression of the HLS throughout the design life cycle. The Offeror shall describe its DDT&E approach that culminates in a crewed demonstration mission to the lunar surface.

In light of NASA's mission manifest, the proposed timing of the Offeror's crewed demonstration mission shall be planned expeditiously to complete the LOCR by NASA's goal timeline of January 2028 while assuring schedule realism and appropriately mitigating risks. While expeditiousness and realism are important to the Government; neither of these attributes offered in isolation will render a proposal eligible for positive evaluation credit. Rather, a proposal that offers an expeditious timeline for a crewed demonstration mission that the Government evaluates as unrealistic overall may be evaluated negatively. Similarly, a proposal that offers, in the Government's assessment, a realistic schedule that does not demonstrate efforts to expedite the crewed demonstration mission may be evaluated negatively. NASA will evaluate the Offeror's proposed timing of the crewed demonstration mission along with the assessed realism of the Offeror's proposed schedule and may evaluate a proposal more favorably if it demonstrates that the Offeror has proposed an expeditious, yet realistic, schedule.

The Offeror shall describe its strategies to manage, develop, control, test, and maintain software in a Software Plan as Attachment 32.

In Attachment 13, Milestone Acceptance Criteria and Proposed Payments, the Offeror shall propose its interim milestones and corresponding proposed milestone payment amounts. The Offeror's Milestone Acceptance Criteria and Proposed Payments will be evaluated for consistency with the Offeror's overall DDT&E approach, including its Integrated Master Schedule (IMS). The Offeror shall propose summaries of the type and magnitude of tasks and activities to be accomplished for each Government-mandated Milestone Review and interim milestones. The Offeror is reminded that FAR 32.1004(a) expressly prohibits the Offeror from identifying the signing of contracts (i.e., authority-to-proceed (ATP)) or the exercise of a contract option as a payment milestone.

Trade Studies. The Offeror shall describe its plan for any design trade studies necessary to be undertaken during the design maturation process.

Understanding of Risks. The Offeror shall identify technical risk areas and describe its approach to minimize and mitigate the total system technical risk associated with the Offeror's HLS development. Offer's proposal shall demonstrate an understanding of such risks, as well as impactful strategies and solutions for mitigating them across all activities for compliance with contract requirements. In

Attachment 33, Risk Reports, Offeror shall identify its cost, technical, schedule, and safety risks associated with development and the Offeror's approach to mitigating these risks.

The Offeror shall include an assessment of the design's maturity (Technology Readiness Level (TRL)) and how that relates to the credibility of the proposed schedule by submitting Attachment 43, Technology Readiness Level Report, with their proposal. For all critical technologies, if any, this assessment shall include the current TRL, a TRL justification, and a top-level maturation plan that identifies the steps to TRL 6 thru TRL 9, including the planned month and year for each step. This assessment shall include any Supporting Spacecraft needed to achieve the mission (This includes spacecraft that provide propellant storage or propellant transfer. This also includes launch vehicle upper stages that perform critical operations above and beyond insertion of a payload into a desired orbit or trajectory.)

The Offeror shall describe risks associated with meeting HLS interfaces.

GTAs and Collaboration. To develop a vehicle that can safely transport human beings into space is an extremely difficult endeavor, and history has demonstrated that success requires the application of deep expertise across many technical disciplines. Based on lessons learned from decades of experience with programs such as Apollo, Commercial Crew, and others, NASA understands that success may be maximized by allowing industry to leverage the experience, skills, facilities, and tools of both the Government and industry. NASA has unique human spaceflight engineering and operations expertise, capabilities, and resources that it is making available to Offerors in accordance with contract section H clause – Use of Government Resources.

The Offeror shall describe its approach to employing work proposed under all Government Task Agreements into the Offeror's HLS development. Furthermore, in its Collaboration Plan, and in accordance with contract section H clause, Use of Government Resources, the Offeror shall also describe its approach to collaboration. When evaluating the Offeror's approach to using on-site NASA resources (as effectuated through one or more GTAs) and/or collaboration, NASA may evaluate those proposals more favorably that demonstrate a comprehensive, thoughtful, and/or strategic approach, and that demonstrably increase the likelihood of successful contract performance. While NASA believes that it has unique resources it is making available to Offerors that may aid HLS Contractor(s) in ensuring performance success, Offerors are advised that merely proposing to use a significant amount of Government resources will not, in and of itself, provide a basis for NASA more positively evaluating a proposal, and may provide a basis for NASA negatively evaluating a proposal if the proposed use of resources does not demonstrate an otherwise well-thought-out, thoroughly-explained approach to development that is likely to reduce the risk of unsuccessful contract performance. Further, in all cases, Offerors are reminded that full contract performance remains solely the responsibility of the Contractor.

GFP (Required and Optional). NASA is making a variety of both required and optional GFP (see section 4.4.6.15 for additional instructions) available to the Contractor for use when performing this contract. In accordance with the instructions set forth below in Section 4.4.6.15, the Offeror shall describe its approach to employing and incorporating GFP (whether required, enumerated optional, and other requested optional) into the Offeror's HLS development, and all proposed GFP shall be negotiated and executed through Optional Government-Furnished Property Agreements (OGFPAs). As part of describing its approach, the Offeror shall include a filled-in GFP List as Attachment 15 to its proposal.

An Offeror's overeliance on optional GFP as part of its technical approach may provide a basis for evaluating the Offeror's proposal less favorably if NASA determines that this approach introduces

additional schedule or technical risk. Further, in all cases, Offerors are reminded that full contract performance remains solely the responsibility of the Contractor.

Key Facilities and Equipment. Facilities critical to the proposed effort should be identified and described in Attachment 35, Key Facilities and Equipment.

4.4.3.3 Technical Focus 3: Verification, Validation, and Certification

In Attachment 8, Verification, Validation, and Certification Plan, the Offeror shall describe its approach for how it plans to achieve NASA certification of its HLS Integrated Lander for human use in order to support completion of LOCR by NASA's goal timeline of January 2028, including the approach and plans for inspection, analysis, and test as appropriate. The Offeror shall identify how its proposed certification approach minimizes risks associated with the completion of the Offeror's design, development, and meeting NASA's requirements necessary for final certification.

The Offeror shall propose its systems engineering and integration (SE&I) approach to meeting contract requirements. The Offeror shall describe its approach to developing and managing: requirements; verifications; design review processes; engineering review processes; change management; and performance margins.

The Offeror shall describe its approach to managing human error in Attachment 28, Human Systems Integration Plan. The plan is used to understand and manage potential catastrophic hazards caused by humans; understand the relative risks and uncertainties within the system design; and influence decisions related to the system design, application of testing and operational use.

The Offeror shall provide an HLS Integrated Lander System Specification as Attachment 29.

The Offeror shall provide an HDL Specification as Attachment 41.

The Offeror shall provide a Software Verification, Validation, and Certification Plan as Attachment 30.

The Offeror shall provide an Assembly, Integration, and Test Plan as Attachment 31.

4.4.3.4 Technical Focus 4: Insight

In Attachment 7, Insight Implementation Plan, the Offeror shall address its approach to communications and coordination with NASA, including the approach to accommodating Government insight of technical and programmatic performance and safety and mission assurance. The Offeror shall explain how it will conform to the terms and conditions as set forth in contract section H clause, *Government Insight*.

The Offeror shall describe in its Attachment 7, Insight Implementation Plan, how it plans to facilitate NASA insight functions to aid verification, validation, and certification activities.

Offerors shall address NASA insight for launch-related activities in Attachment 7, Insight Implementation Plan, including insight into sub-tier launch vehicle Contractors, if applicable.

4.4.3.5 Technical Focus 5: Launch and Mission Operations

4.4.3.5.1 Mission Operations

Mission Operations (i.e., "HLS Flight Operations and operations support" in the SOW) for HLS spans the project life including operational assessments in DDT&E, operational production development; mission planning; crew, flight controller, and Mission Management Team (MMT) training; and real-time mission execution.

The Offeror shall propose a comprehensive, collaborative, and feasible approach for conducting integrated mission operations between NASA and the Contractor in the Mission Operations and Mission Systems Plan (DRD OP-003) in accordance with the requirements set forth in the SOW and in accordance with the Collaboration Plan. The Offeror's approach should address all mission operations activities across the project lifespan, including mission planning operations and product development, mission operations training, and mission execution for both uncrewed and crewed lunar operations, and should describe a collaborative approach to conducting integrated mission operations. Offeror proposals may include co-location at MCC-H or integrating a distributed team, communicating how the proposed approach provides value to the Government while ensuring safety of the crew and mission success. For each HLS Flight Operations Phase described in the SOW (within Section 5.10.4.3), the Offeror shall identify its: (1) corresponding proposed Operational Mode as described in the SOW; and (2) how the Contractor flight operations team will be deployed (e.g., co-located at MCC-H or distributed at a Contractor control center facility with appropriate interface and communication with MCC-H as required).

The Integrated Operations Training capability for the HLS crew and flight operations personnel will be achieved through a collaborative training approach between the Contractor and NASA. The Offeror shall propose an approach for Integrated Operations Training (DRD OP-002) in accordance with the requirements set forth in the SOW and in accordance with the Collaboration Plan.

Note that general mission operations advisory expertise may be requested by the Offeror in their proposed Collaboration Plan.

4.4.3.5.2 Launch and Delivery Operations

The Offeror is required to propose how it will launch and deliver its Integrated Lander (and all elements thereof), and HDL (and Human-Class Cargo), to the Moon using a U.S. commercial launch vehicle provider(s) space transportation service and space transportation vehicle, including all phases of launch vehicle flight and, if applicable, any Supporting Spacecraft. It is permissible for individual HLS Integrated Lander Elements and HDL Elements (and Human-Class Cargo) to be launched separately on multiple U.S. commercial launch vehicles, depending on the Offeror's architecture. NASA intends to make the Gateway available as a rendezvous, aggregation, staging, and/or logistics point as needed by the Offeror.

The Offeror's plan for launch operations shall address the following items:

i. The Offeror shall propose a U.S. commercial launch vehicle service approach for transportation of HLS Integrated Lander and HDL Elements to orbit or trans-lunar injection (TLI) as appropriate, as well as all necessary launch slots and licenses in accordance with contract H clause – Licenses, Permits, and Other Authorizations for a Launch or Reentry Service Operator. No later than three months prior to the FRR for each Integrated Lander or HDL Element type, the proposed launch vehicle identified in the Offeror's proposal must either:

    1. Have been certified under the NASA Launch Services (NLS) II Category 3 certified vehicle in accordance with NPD 8610.7, *Launch Services Risk Mitigation Policy for NASA-Owned and/or NASA-Sponsored Payloads/Missions,* or
    2. Have at least three (3) successful demonstrated launches of a common launch vehicle configuration prior to launching any HLS Integrated Lander Elements.

ii. Offerors shall identify any Government services, infrastructure, ground support furnished equipment required, and all associated estimates of the cost of those resources for evaluation purposes.

4.4.3.6 Technical Focus 6: Approach to Early System Demonstrations

Consistent with the SOW (especially sections addressing the uncrewed demonstration flight) and as shown in the Offeror's IMS, the Offeror shall describe its approach to early system demonstrations, including both hardware and software. In light of the rapid HLS development, an approach to these demonstrations that demonstrably reduces schedule and technical risk will provide a basis to NASA for evaluating a proposal more favorably.

4.4.4 Volume II: Price

The Offeror's Volume II: Price shall consist only of the filled-in Pricing Template attachment (solicitation Attachment P).

4.4.4.1 Certified Cost and Pricing Data

NASA expects to receive proposals in response to this solicitation of a type and number such that NASA will achieve adequate price competition. Therefore, in accordance with FAR 15.403-1(b)(1) and FAR 9903.302(b)(15), NASA will not require certified cost and pricing data from Offerors when receiving proposals from Offerors under this solicitation, and will not require Offerors to be compliant with Cost Accounting Standards.

Offerors are advised that **FAR 52.215-21 (NOV 2021) Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data – Modifications** will be incorporated by reference and apply during contract performance, where applicable.

4.4.4.2 Price Volume Proposal Instructions

Attachment P, Pricing Template. For Volume II: Price, the Offeror shall submit data in their native Microsoft Excel 2010 or later format. The prime Offeror shall utilize the Government-provided Pricing Template (solicitation Attachment P) to encompass all prices associated with the requirements of the solicitation. The prime Offeror shall follow the instructions contained in the Pricing Template Instructions tab. The Pricing Template collects Offeror inputs for the following:

- CLINs as described in Section 1.3.3 Overview of Contract Periods of Performance.
- Cost for work to be performed on-site at one or more NASA facilities using NASA resources to do so (as memorialized in one or more GTAs) (to be added to the Offeror's Total Evaluated Price for evaluation purposes).
- Cost for optional GFP requested by the Offeror (as memorialized, where applicable, in one or more OGFPAs) (to be added to the Offeror's Total Evaluated Price for evaluation purposes).
- Offerors shall include fully burdened IDIQ labor rates under Tab D of Attachment P, Pricing Template

All price proposal information shall be contained within Offeror's Volume II. The Offeror shall ensure that its prices submitted in Volume II are consistent with all other portions of its proposal, including the milestone payments proposed by the Offeror in other Volumes and Attachments, as well as the information provided in Attachment 3, Corporate Contribution Worksheet. If there are pricing inconsistencies within the Offeror's proposal volumes, the Government will review the proposal as a whole and, at its unilateral discretion, determine the FFP that has been proposed by the Offeror (as well

as calculate the correct Total Evaluated Price for each Offeror), and may also evaluate the Offeror's proposal more negatively overall as a result of any internal proposal inconsistencies.

4.4.5 Volume III: Management

The Offeror's proposal shall contain a Volume III: Management describing its approach to managing and coordinating the efforts of this contract, including planning, assigning responsibility, controlling personnel, controlling utilization of resources, tracking deliveries, managing subcontractors and suppliers, and periodically monitoring performance and obtaining feedback. Volume III shall demonstrate a thoughtful approach to managing a fixed-price research and development contract of this magnitude and complexity. Volume III shall also demonstrate the Offeror's relevant past performance as an indicator of NASA's confidence in the Offeror's ability to successfully perform a complex spaceflight hardware development effort along with successful demonstration of that hardware. Offerors are responsible for submitting a complete, consistent, and comprehensive management proposal that addresses the entirety of the proposed effort, but shall ensure that at a minimum, the proposal addresses the following Management Areas of Focus. NASA will assess the merit of each Offeror's proposal through these established Management Areas of Focus. Management Areas of Focus are not listed in order of importance. Rather, NASA will conduct a holistic assessment through these Areas as a means of evaluating the Offeror's end-to-end approach to effectively and successfully managing its design and develop an HLS integrated lander capability on schedule for all design variants and complete a successful crewed demonstration of the Integrated Lander capability.

4.4.5.1 Management Focus 1: Organization and Management

Program Management. The Offeror shall describe its approach to effective program management of the effort, including its approach to managing cost, technical, and schedule performance, as well as its process for effectuating key decision points and managing completion of key phases of the effort. Consistent with and in addition to the Offeror's Project Management Plan (Attachment 20), the Offeror shall describe how its program management decision-making process is incorporated into its risk management and reduction approach.

Organizational Structure. The Offeror's approach shall also include its proposed organizational structure, interfaces, and subcontractor and supplier teaming arrangements (including relationships with corporate, Government, and other team members) to manage contract requirements. Offererors shall demonstrate available resources for work to be performed under this contract given other ongoing efforts by the Offeror.

Consistent with, and in addition to, Offeror's Collaboration Plan, the Offeror's approach shall describe how the Offeror will evolve and manage organizational changes throughout the life of the contract in order to accommodate collaboration activities. The Offeror shall describe its approach to managing each collaboration effort within its team.

4.4.5.2 Management Focus 2: Schedule Management Process

Consistent with and in addition to Attachment 19, Integrated Master Schedule (IMS), the Offeror shall describe its approach to effectively managing its proposed development schedule in order to support demonstration of the Offeror's HLS capability. While Technical Area of Focus 2 evaluates the Offeror's development approach and associated schedule (including the specific dates proposed by the Offeror for its proposed crewed demonstration mission, and the realism of those dates), this Management Area of Focus 2 will evaluate the methodology the Offeror proposes to use to manage its schedule during contract performance. This includes, but is not limited to, the Offeror's management approach to

ensuring that it is able to achieve its proposed schedule, despite unforeseen circumstances. Consistency throughout the Offeror's proposal on issues of schedule and schedule management are critical; the Offeror's approach should evince consistency between the Offeror's schedule and all milestones (and associated payments), activities, and tasks leading to the proposed date for HLS completion, identify schedule interdependencies and schedule constraints and compressions, and describe strategies for addressing and mitigating such constraints and compressions. The Offeror's schedule shall be consistent with its program management approach and its risk reduction approach.

4.4.5.3 Management Focus 3: Risk Management Process

In Attachment 22, Risk Management Plan, the Offeror shall describe its approach to risk acceptance and integrated risk management in order to address the identification and assessment of principal technical, schedule, and cost risks, as well as its approach for mitigating, and/or accepting such risks.

4.4.5.4 Management Focus 4: Business Approach

The Offeror shall propose a description of its business approach for leveraging any aspect of its HLS effort to enable current and future business uses of HLS capabilities or technologies while maintaining compatibility with NASA's HLS requirements, facilitating sustainable and cost-effective recurring lunar transportation services for NASA and other customers, and in doing so, stimulating the growth of a viable lunar economy in these areas. The Offeror's approach shall describe all planned business applications of technologies and capabilities developed and/or demonstrated under this effort and its approach for integrating such technologies and capabilities into current or future applications for existing or emerging markets. If the Offeror proposes to provide services to non-NASA customers during performance of contract activities, the Offeror shall explain how such activities will provide benefits to NASA, including, but not limited to, actual or potential impacts on the Offeror's firm fixed price (in accordance with contract section H clause, Non-NASA Cargo, Payloads, and Services).

The Offeror may also demonstrate a commitment to the public-private partnership formed under this solicitation by providing a Corporate Resource Contribution that is directly relevant to the proposed effort, with supporting documentation (refer to 4.4.6.3 Corporate Contribution Worksheet and Narrative). While a corporate contribution in and of itself will not be a basis for NASA more favorably evaluating a proposal (except to the extent it results in the offer of a lower firm fixed price), the Offeror shall summarize the proposed corporate contribution and explain the tie to the Offeror's business approach. Corporate contributions that demonstrably further an Offeror's business approach may be evaluated more favorably. The Offeror shall describe how its business approach will benefit NASA's future human and robotic exploration missions, including how such an approach could enable sustained, continuing, or lower-cost access to the lunar surface.

Planned reusability should be described, including design life plans for resupplying on future missions (e.g., propellant, ECLSS consumables), and anticipated Government resources to support reusability (if any).

NASA is assuming that the Offeror's business approach will lead to lower-cost missions for NASA or others in the future, but if the Offeror can otherwise present a case for long-term affordability without commercialization, NASA may consider the merits of such a proposal and it may be evaluated more favorably.

With this solicitation, NASA is seeking to acquire a crewed lunar landing demonstration of a lander that enables long-term affordability. NASA has assessed that cost for recurring production and operations drive long-term affordability. In a future Services solicitation, NASA will likely request Offerors to assess

their HLS designs for relevant DRMs against a set of long-term affordability metrics. These metrics may or may not include items such as:

- Dollars/kg for downmass to the lunar surface from NRHO
- Dollars per utile crew EVA hour on the lunar surface
- Dollars per crew member to the lunar surface
- Cadence-related (e.g., lead times, time between repeat missions, constraints)

The Offeror shall include an assessment of how their business approach supports long-term affordability, with supporting rationale.

4.4.5.5 Management Focus 5: Past Performance

In proposal Attachment 11, Past Performance Narrative, the Offeror shall provide a narrative summary of up to three (3) relevant contracts and/or agreements that are active or were completed in the last five (5) years that are relevant to the development of complex spaceflight hardware, including systems for human rating. See Table 8 for Past Performance Definitions of relevancy. Performance of referenced contracts shall be limited to that which occurred within five (5) years of the due date for receipt of proposals. Additionally, each referenced contract shall have a minimum performance of six months within the 5-year period. Performance of any effort outside the 5-year period will not be evaluated.

Additionally, the Offeror shall provide up to two (2) additional narrative summaries for each qualifying major subcontractor or team member, defined as those subcontractors or team members proposed to perform at least twenty (20) percent of the total value of the contract, inclusive of options. Emphasis should be placed on the past performance of the division of the entity that is proposed to complete the effort or major components thereof. Inclusion of past performance narratives for subcontractors that perform less than twenty (20) percent of the total value of the contract is at the Offeror's discretion.

For each reference, the Offeror's narrative summaries shall specifically provide where applicable: contract/agreement name and number, company name; contract type, total original and present or final dollar value, Contractor and Government Entity (CAGE) code; a description of the relevant technical requirements; method of acquisition (competitive or noncompetitive, contract or agreement); nature of award (initial or follow-on); any unique technical, schedule or contractual requirements; achievements in complying with subcontract plan goals for small business; and overall performance. The Offeror shall list the date of contract/agreement, place(s) of performance, and delivery dates or periods of performance. The Offeror shall include the magnitude of the relevant work directly accomplished in relation to the total contract or agreement scope.

The Offeror shall utilize its narrative summaries to describe the maturity and quality of the development efforts undertaken, along with a list of any major deviations or waivers to technical requirements that were granted by the customer. The Offeror shall also utilize its narrative summarites to demonstrate how the Offeror or its major subcontractors or team members have effectively managed major development programs and to provide information concerning problems encountered on these efforts and any associated corrective actions. The Offeror should explain how it addressed and overcame significant technical, schedule, and other management problems associated with performance of the efforts.

For each past performance narrative, the Offeror shall provide the name and the current and verified address and telephone number for both the lead contractual and technical personnel.

An Offeror, or major team member, subcontractor and supplier, shall state if no past performance on previous contracts and/or agreements has been established. If no record of relevant performance on previous contracts and/or agreements has been established, Offerors may submit additional information at their discretion if they consider such information necessary.

The Past Performance Narrative is limited to no more than fifteen (15) pages in length, but this page count does not count against an Offeror's page limit for Volume III.

4.4.5.6 Management Focus 6: Small Business Subcontracting

In Attachment 4, Small Business Subcontracting Plan, the Offeror shall describe its proposed subcontracting goals (overall subcontracting goals and the individual subcontracting goals by small business category).

The Government will evaluate the Offeror's Small Business Subcontracting Plan in terms of the Offeror's proposed subcontracting goals (overall subcontracting goals and the individual subcontracting goals by small business category) in comparison to the Contracting Officer's assessment of the appropriate subcontracting goals for this solicitation (as specified below in Table 4: Small Business Goals).

The Offeror's Small Business Subcontracting Plan will also be evaluated in terms of meeting the requirements of FAR 52.219-9 (deviated) and FAR 19.704, *Subcontracting Plan Requirements*.

4.4.5.7 Management Focus 7: Data Rights

Obtaining sufficient rights in the technical data (TD), computer software (CS), and computer software documentation (CSD) for HLS is an important objective for NASA under this Appendix P. Consistent with, and in addition to, submittal of its *Assertion Notice* pursuant to FAR 52.227-14 (Deviated), the Offeror's proposal shall describe how it will offer data rights in TD/CS/CSD for all hardware, software, and interfaces that will be developed under the HLS contract and otherwise incorporated into the final HLS.

It is the Government's desire that all HLS TD/CS/CSD be delivered with Government Purpose Rights (GPR) as defined in contract clause FAR 52.227-14 (Deviated) or better. If the Offeror proposes to deliver commercial TD/CS/CSD, it is the Government's desire to obtain a license to the commercial TD/CS/CSD that would grant the Government the equivalent of GPR.

If the Offeror provides assertions pertaining to delivery of any TD/CS/CSD with less than GPR in its *Assertion Notice*, the Offeror shall furnish a written explanation with its proposal separate from and in addition to the *Assertion Notice* for any restriction asserted by the Contractor or its subcontractors on the right of the United States or others to use that TD/CS/CSD and the detailed basis for that right. Offeror shall also provide a reasonable amount of initial evidence to support any such assertion with submission of its proposal. Following contract award, if the Contracting Officer, after reviewing the written explanation(s) and evidence furnished in Offeror's proposal, or any other available information pertaining to the validity of an asserted restriction, determines that reasonable grounds exist to question the validity of the assertion, and that allowing the Contractor to deliver the TD/CS/CSD with less than GPR would make impracticable the subsequent competitive acquisition of the item, component, or process to which the TS/CS/CSD relates, the Contracting Officer will follow the procedures in contract section H clause, Validation and Challenge Procedures for Technical Data and Computer Software.

If the Offeror does not need to have any entries for TD/CS/CSD in the *Assertion Notice*, the Offeror shall submit the Notice and enter "None" in the body of the list.

If the Offeror is awarded a contract, the *Assertion Notice* shall be incorporated into the contract. However, note that the Government, at time of contract award, will only incorporate into the contract those specific entries in the Offeror's *Assertion Notice* that the Government has adjudicated, at its unilateral discretion, as fully compliant with this solicitation's terms and conditions. The Government will provide notice to the Offeror before award of the specific entries it intends to incorporate into the contract. After contract award, pursuant to paragraph (f)(4) of the 52.227-14 Rights in Data – General (Deviated) clause of the HLS Contract, other assertions may be identified by the Contractor and be eligible for incorporation into the *Assertion Notice*. Nonetheless, the Government notes that it is to the advantage of both parties to begin contract performance with as much clarity and agreement as to each party's rights in data as is reasonably possible. This clarity will prevent protracted negotiations and/or disputes while on contract.

Offerors are advised that for TD/CS/CSD listed on Offeror's *Assertion Notice*, if the basis for delivering such items with limited rights is anything other than "developed/will be developed entirely at private expense," the Offeror's proposal may receive a less favorable evaluation as a result. Proposals that demonstrate a notably comprehensive approach to delivering all TD/CS/CSD developed under this contract or otherwise incorporated within HLS with GPR or better may receive a more favorable evaluation. The Government will conduct an evaluation of any perceived risks or detriments associated with obtaining less than GPR in any TD/CS/CSD, and these risks may negatively impact the assigned adjectival rating for the Technical factor. Such risks include, but are not limited to: the ability of HLS to interface or integrate with other Artemis components or systems; NASA's ability to use common technical solutions and approaches between HLS and other current and/or future Artemis components or systems, including any potential cost-savings to NASA; and/or NASA's ability to deploy technical designs and/or computer software developed under this Appendix P or otherwise incorporated into HLS into future NASA procurements.

4.4.6 Volume IV: Mandatory Proposal Attachments

The following is a list of all of the required proposal Attachments that Offerors must submit with their proposal. The required content of some of these Attachments is contained elsewhere in this solicitation, such as in the corresponding DRD (note that most DRDs require content for both Integrated Lander and HDL variants), or above in the Technical and Management factor descriptions. For those Attachments, no further instructions are provided below. For Attachments that are not described elsewhere in this solicitation, specific requirements are detailed below.

4.4.6.1 Reserved

4.4.6.2 Domestic Source Certification

As part of their proposal, Offerors shall certify that, at time of proposal and at all times during contract performance, Offerors will be in compliance with the domestic source requirements provided in contract H clause entitled Domestic Source Requirements (as modified). **The entirety of this clause (as modified) shall be incorporated into Offeror's certification.** Offerors shall attach the certification as Attachment 2 to their proposal, which shall be titled, *Domestic Source Certification*. This certification will become a part of the contract if Offeror is awarded a contract.

4.4.6.3 Corporate Contribution Worksheet and Narrative

As part of creating a sustainable lunar exploration program, the Offeror may elect, at its discretion, to demonstrate a commitment to the public-private partnership formed under this solicitation by providing a Corporate Resource Contribution. Any such Corporate Contribution must be invested coincident with the period of performance of this effort. The cost of developing items, processes, software, prototypes,

and the like, if such development occurred prior to the period of performance of this contract, does not qualify as coincident for purposes of this solicitation. The value of the item itself, if incorporated into the HLS, does qualify as coincident.

A Corporate Contribution may be in the form of direct labor, consumables, or other in-kind contributions. Other forms of Corporate Contributions that NASA has deemed acceptable for this effort include, but are not limited to, travel directly related to achieving proposed objectives during the period of performance; investments in special facilities or equipment, tooling, or other private investment; and internally funded technology maturation. While NASA expects that the majority of any proposed Corporate Contribution will be comprised of private corporate resources, Offerors are also permitted to classify state and local Government contributions to this effort as a Corporate Contribution.

Criteria and procedures for the allowability and allocability of cash and non-cash contributions shall be governed by Federal Acquisition Regulation (FAR) Parts 30 and 31, and NASA FAR Supplement (NFS) Parts 1830 and 1831.

If the Offeror elects to propose foreign participation in research and development efforts as part or all of their Corporate Contribution, the Offeror shall not also propose such foreign participation pursuant to the no-exchange-of-funds policy and procedure as set forth in specified at NFS 1835.016-70(a) and (b). I.e., any external funding that constitutes foreign research and development, and that is specifically characterized by the Offeror as a Corporate Contribution, is not subject to the procedures at NFS 1835.016-70(b), and NASA will therefore not endeavor to negotiate an agreement with a sponsoring foreign agency or funding institution in exchange for any such proposed foreign research and development efforts.

Corporate Contribution proposals that include foreign participation in research and development efforts shall conspicuously contain the following verbatim statement (with the Offeror's name filled-in where indicated):

> ***This proposed Corporate Contribution includes foreign research and development efforts. Through submission of this proposal, [Offeror] certifies that no NASA funding obtained by [Offeror] through this BAA will be used for any foreign research and development efforts that [Offeror] has represented are a part of its Corporate Contribution, and that [Offeror] will bear full responsibility for any and all costs associated with such foreign research and development efforts. [Offeror] also acknowledges that for any foreign research and development proposed as a Corporate Contribution, NASA has no obligation to negotiate a no-funds-exchanged agreement with any foreign agency or funding institution in order to facilitate [Offeror's] use of this foreign research and development effort.***

Offerors shall identify and describe any proposed Corporate Contribution, and provide all applicable supporting documentation, in proposal Attachment 3, Corporate Contribution Worksheet and Narrative. Note that the applicable solicitation worksheet (solicitation Attachment D) has multiple tabs to capture Offeror inputs, including a tab for input of the Offeror's Corporate Contribution Narrative.

4.4.6.4 Small Business Subcontracting Plan

The Contracting Officer's assessment of appropriate subcontracting goals for this acquisition, expressed as a percent of the total dollar amount of all CLINs is shown in Table 4.

Table 4: Small Business Goals

Socioeconomic Category	**Goal as % of contract value**
Small Businesses (SB)	10.0 %
Small Disadvantaged Business Concerns (SDB)	3.0 %
Women Owned Small Business Concerns (WOSB)	3.0 %
Historically Black Colleges and Universities (HBCU)/Minority Serving Institutions (MSI)	0.1 %
HUBZone Small Business Concerns (HBZ)	0.5 %
Veteran Owned Small Business Concerns (VOSB)	0.8 %
Service-Disabled Veteran-Owned Small Business Concerns (SDVOSB)	0.5 %

The goals in the Small Business Subcontracting Plan shall be on the basis of both (1) percentage of the total dollar amount of the base CLINs and all options; and (2) the percentage of total subcontracting dollars, as required by paragraph (d) (1) of FAR Clause 52.219-9 *Small Business Subcontracting Plan*. Offerors shall refer to the deviated version of FAR Clause 52.219-9, *Small Business Subcontracting Plan*, contained in the contract for instruction. This deviated clause permits the prime Contractor to receive credit towards its subcontracting goals for awards made to small business concerns at any tier by subcontractors with individual subcontracting plans. Offerors must perform an independent assessment of the small business subcontracting opportunities which support the proposed goals.

Time-phased subcontracting goals are encouraged. Time-phasing over the life of the contract can help account for the peaks and valleys in subcontract dollars that typically occur. For example, if a prime Contractor proposes a SB goal that would result in $100M going to SB concerns over the life of the contract, the prime would project cumulative SB dollar targets to be achieved at subcontract reporting periods through the end of the contract. The last reporting period would reflect an SB dollar target of $100M.

Offerors are encouraged to propose goals that are equivalent to or greater than those recommended by the Contracting Officer. Offerors shall describe the rationale for any goal proposed that is less than the Contracting Officer's recommended goal in any category. In addition, the Offeror shall describe the efforts made to establish/propose a goal for that category that is different from the Government-recommended goal and what ongoing efforts, if any, the Offeror plans during performance to increase participation in that category.

Offerors that qualify as small businesses are not required to submit subcontracting plans, however, they shall provide a discussion of the extent that subcontracting opportunities exist in their approach to contract performance. The Government will only evaluate the amount of work proposed to be performed by the small business prime and any small business at the first-tier subcontract level. The proposed amount of work to be done by the prime small business and first tier small business subcontractors will be evaluated against the Contracting Officer's assessment of the overall subcontracting goal for this procurement. Individual subcontracting goals by small business categories will not be evaluated for small business primes and their first-tier subcontractors.

The Offeror shall provide a description of commitment to use the subcontractor(s) (identity of small business, demonstrated contractual agreements, letters of commitment, etc.), as well as describe work that will be performed by small businesses. If the Offeror has identified small business subcontractor(s),

the Offeror must connect the work to the subcontractor and specify the extent of commitment to use the subcontractor(s) (enforceable vs. non-enforceable commitments). Proposals should also identify any work to be subcontracted that is considered "high technology." High Technology is defined as research and development efforts that are within or advance the state-of-the-art in technology discipline and are performed primarily by professional engineers, scientists, and highly skilled and trained technicians or specialists.

The Offeror shall describe any procedures and organizational structures for small business outreach, assistance, participation in the Mentor-Protégé program, counseling, market research and small business identification, and relevant purchasing procedures. For large business Offerors, this information shall conform to its submitted Small Business Subcontracting Plan. For small business Offerors, this applies only if subcontracting opportunities exist. Note: following successful completion of a "reboot" of the NASA Mentor-Protégé Program on March 1, 2020, NASA is once again accepting Mentor-Protégé Agreements for Agency review/approval.

4.4.6.5 Collaboration Plan

In its Collaboration Plan, the Offeror shall provide the details of its planned approach to utilization of the up to sixty (60) NASA Equivalent Personnel (EPs) that NASA has offered to all Offerors, at no charge, for Collaboration under this contract (see contract section H clause – Use of Government Resources). To inquire about relevant NASA expertise (see Attachment A4 for a summary of NASA capabilities), the Offeror shall coordinate with NASA Center POCs (see Attachment B). The Offeror shall describe how, if at all, it envisions incorporating NASA EPs during any or all phases of technical development. At a minimum, the Offeror shall identify the internal Offeror team(s) to which the Offeror plans to add one or more NASA EPs; explain how NASA's unique expertise will be utilized to advance the Offeror's development plan and/or technical approach; and discuss the intended duration of support from the NASA EPs in each instance and the intended benefits of utilizing the NASA EPs in the manner proposed by the Offeror.

The Government will evaluate the Offeror's Collaboration Plan primarily as part of its evaluation of Technical Area of Focus "Development, Schedule, and Risk" and Management Area of Focus "Organization and Management."

4.4.6.6 Government Task Agreements (GTAs) and Optional Government-Furnished Equipment or Property Agreements (OGFPAs)

Government Task Agreements (GTAs). In accordance with contract section H clause, *Use of Government Resources*, Government Task Agreements (GTAs) shall be used to memorialize the Contractor's requested use of Government resources on-site at NASA facilities (e.g., use of a NASA wind tunnel for specialized testing). The Offeror shall submit completed GTAs as attachments to its proposal. GTAs shall have a preliminary agreed-upon price between the Offeror and the Performing Organization. The Government will evaluate the Offeror's GTAs primarily as part of its evaluation of Technical Area of Focus "Development, Schedule, and Risk." For price evaluation purposes, the total cost of all proposed GTAs will be included in the Government's calculation of the Offeror's Total Evaluated Price. Offerors are advised that if awarded a contract for this effort, the final terms of all GTAs will be agreed-upon after award by NASA and the Contractor(s).

To inquire about relevant NASA facilities or expertise (see Attachment A10 for a summary of NASA capabilities), Attachment B contains a list of the Center points-of-contact for each NASA Center. For purposes of submitting GTAs with its proposal, the Offeror's requested Government-contributed

resources should involve only those NASA facilities, services, or other in-kind contributions that are unique and not reasonably available commercially. The Offeror shall follow the instructions for use of GTAs as provided in solicitation Attachment Q – Government Task Agreement Instructions. The Government has the right to refuse any GTA request for any reason. The Offeror shall contact the NASA Points of Contact to negotiate the terms of each GTA; however, the Point of Contact's signature shall not constitute a binding commitment on behalf of the Government of the availability of such resources or a commitment to provide them by/on a date certain. Each Center shall provide a cost for each GTA, but the Offeror shall not include this cost in its firm fixed price. The provision of any GTA shall be subject to a determination by the Government that any potential organizational conflicts of interest can be effectively avoided, negated, and/or adequately mitigated. If an OCI exists or the Government determines one exists, a mitigation approach must be provided to the Contracting Officer for determination and acceptance prior to executing the terms of any GTA.

For proposals that include hardware delivered to and/or tested at NASA centers, Offerors shall submit appropriate Safety and Health plans prior to delivery or testing to address hazardous materials/activities, environmental and facilities considerations commensurate with their hardware and in accordance with NASA policy and regulations. Required documentation is dependent upon the hardware, identified hazards, and nature of the tests and facilities being exercised.

The operation by the Contractor of non-NASA-owned Ground Support Equipment (GSE) at one or more NASA-owned facilities is permissible under this contract only if the Contractor and NASA have executed one or more Government Task Agreements (GTAs) to cover this activity. Such GSE shall be designed in accordance with standards agreed upon by the NASA facility representatives and the offeror. The Contractor and NASA must agree to all applicable standards and document this agreement in writing as an attachment to the GTA(s), with the concurrence of the Contracting Officer, before the Contractor is permitted to install or operate non-NASA-owned GSE at any NASA facility. Please reference the GTA template for additional information and applicable procedures.

Optional Government-Furnished Property Agreements (OGFPAs). In accordance with contract section H clause, *Contractor Use of Government-Furnished Equipment, Property, or Information*, Optional Government-furnished Property Agreements (OGFPAs) shall be used to memorialize the Contractor's requested use of optional Government-furnished property or information (collectively, "GFR"). The Offeror shall submit completed OGFPAs as attachments to its proposal. OGFPAs shall have a preliminary agreed-upon price between the Offeror and the Performing Organization. The Government will evaluate the Offeror's OGFPAs primarily as part of its evaluation of Technical Area of Focus "Development, Schedule, and Risk." For price evaluation purposes, the total cost of all proposed OGFPAs will be included in the Government's calculation of the Offeror's Total Evaluated Price. Offerors are advised that if awarded a contract for this effort, the final terms of all OGFPAs will be agreed-upon after award by NASA and the Contractor(s).

To inquire about the availability of optional GFR, Attachment B contains a list of the Center points-of-contact for each NASA Center. Such proposed requests must be within the scope of the contract and are subject to the availability of that GFR and the Performing Organization's ability and willingness to provide them. The Offeror shall follow the instructions for use of OGFPAs as provided in solicitation Attachment K – Optional Government-furnished Property Agreements (OGFPAs). The Offeror shall contact the NASA Point of Contact to negotiate the terms of each OGFPA; however, the Point of Contact's signature shall not constitute a binding commitment on behalf of the Government of the

availability of such GFR or a commitment to provide it by a date certain. Each Center shall provide a cost for each OGFPA, but the Offeror shall not include this cost in its firm fixed price.

Note: NASA's intention to provide the Government resources memorialized in one or more GTAs or OGFPAs is nonexclusive and contingent on the selection of the Offeror's proposal for the HLS, as well as the availability of appropriated funds and other required resources. NASA will make good-faith, reasonable efforts to provide the resources documented in the GTAs and OGFPAs, but the availability of these resources is subject to change. The actual commitment of NASA resources will be documented in GTAs and OGFPAs to be fully negotiated and approved after HLS contract award.

4.4.6.7 Insight Implementation Plan

Refer to 4.4.3.4 Technical Focus 4: Insight and DRD MA-001 for details.

4.4.6.8 Verification, Validation, and Certification Plan

Refer to 4.4.3.3 Technical Focus 3: Verification, Validation, and Certification and DRD SE-002 for details.

4.4.6.9 Design and Performance Metrics Tables

Refer to 4.4.3.1 Technical Focus 1: Technical Design Concept, as well as Attachment J for details.

4.4.6.10 Safety and Mission Assurance Plan

Refer to 4.4.3.1 Technical Focus 1: Technical Design Concept and DRD SA-002 for details.

4.4.6.11 Past Performance Narrative

Refer to 4.4.5.5 Management Focus 5: Past Performance for details.

4.4.6.12 Review Plan

Refer to DRD MA-002.

4.4.6.13 Milestone Acceptance Criteria and Payment Schedule

The following FAR provision provides general instructions for Offerors to propose performance-based interim milestones, and milestone payment amounts, in the fillable solicitation Attachment O:

FAR 52.232-28 Invitation to Propose Performance-Based Payments (MAR 2000)

Other Information Pertinent to this Proposal Attachment. Performance-based payments under this contract will be made on a delivery-item basis as opposed to a whole contract basis; all CLINs will utilize a performance-based payment scheme, with the exception of CLIN 002, IDIQ – Special Studies and Tasks. Solicitation Attachment O, Milestone Acceptance Criteria and Payment Schedule, contains information concerning payment milestones. There are three types of milestones used in Attachment O, and each type requires a different proposal response from Offerors: Delivery Milestones; Interim Milestones that are mandatory; and Interim Milestones that are proposed by the Offeror.

The Offeror shall fill in Attachment O with proposed milestone payment amounts for all Government-required and Offeror-proposed milestones. Offeror shall propose interim milestones that it proposes to utilize that are in addition to the ones mandated by the Government. Offerors may use NASA NPR 7123 as reference/lessons learned on design review content. All payment milestones should be associated with technical milestones that include deliverables. Payment milestones may be proposed more frequently than monthly, but Offerors should note that the Government will not make payments more frequently than monthly.

Interim milestones could be, but are not limited to, milestones such as design and development activities, test(s), and certification activities. Interim milestones shall support the Government's mandatory milestones and provide evidence in making significant progress toward achieving a NASA certification of the HLS. Proposed interim milestones should clearly represent significant certification efforts required to show evidence of certification progression between applicable Government-mandated Milestone Reviews. These interim milestones should represent completion of significant design and development activities, key testing and analysis, safety reviews, or demonstration of meeting high risk or key performance requirements. Milestone acceptance criteria should be specific, measurable, appropriate, realistic, and timely. Greater than 60% of the sum of the prices for proposed Interim milestones across all Integrated Lander CLINs (001, 003-005) should directly reflect completion or testing of hardware and/or software. The Government reserves the right to negotiate any aspect of an Offeror's milestone payment amounts, schedule, and/or acceptance criteria prior to contract award.

When proposing milestone payment amounts, the Offeror shall comply with all terms and conditions set forth in FAR 52.232-32 Performance-Based Payments.

The Offeror shall not propose additional delivery milestones beyond those already established by the Government. Further, for CLIN 005, Integrated Lander Sustaining Demo Mission Crewed Demonstration Sortie Mission, specifically, the Offeror shall not propose any interim milestones between the final and second-to-final delivery milestones.

4.4.6.14 Reserved

4.4.6.15 GFP List

In accordance with SOW Section 4.6, NASA is requiring mandatory GFP for use on this contract. NASA has listed the GFP that the Offeror shall use during performance in the GFP List (see solicitation Attachment I). In addition, there are two types of optional GFP available to the Offeror: (1) Enumerated GFP listed in the solicitation (Tab 2 of Attachment I); (2) Non-Enumerated GFP (not listed in the solicitation). Offerors shall refer to Attachment I when completing all information required for Attachment 15. In doing so, Offerors must consult with designated NASA POCs about availability of GFP not expressly listed in Attachment I, as well as the value of that GFP. Offerors may request specific GFP, and, with NASA concurrence as to the availability and value of such GFP, Offerors may include it in their proposals. Additionally, in order to effectuate their requests for all optional GFP not listed in the solicitation, Offerors must execute an Optional GFP Agreement (see template at proposal Attachment K) to document the agreement between NASA and the Offeror to potentially provide the requested GFP to the Offeror during performance.

Offerors are advised that for all optional GFP (whether listed or not), the cost of this GFP will be added to the Offeror's Total Evaluated Price for proposal evaluation purposes.

The Offeror's Required GFP List shall be filled-in in accordance with the template provided as an attachment to this solicitation. If an Offeror requests that NASA augment or transform a GFP item, an associated GTA form should be completed in addition to any required OGFPA form.

4.4.6.16 Data Rights Assertion Notice

Refer to 4.4.5.7 Management Focus 7: Data Rights and FAR 52.227-14 (Deviated) for details.

4.4.6.17 Organizational Conflicts of Interest Plan

In accordance with DRD MA-007, Offerors shall submit for NASA approval a comprehensive Organizational Conflicts of Interest (OCI) Plan.

The Contracting Officer will review the information in the OCI Plan for completeness and understanding and may identify to the Offeror omissions and other defects or areas of concern requiring correction or further explanation. **This review is separate from the proposal evaluation. The Contracting Officer will identify any areas in which proposed mitigation requires further action. As such, the Government may communicate, outside of discussions, with any Offeror at any time during the review of their OCI Plan**; however, substantive omissions and OCIs that cannot be effectively mitigated may result in the proposal being ineligible for award.

4.4.6.18 Integrated Operations Training

Refer to 4.4.3.5 Technical Focus 5: Launch and Mission Operations and DRD OP-002 for details.

4.4.6.19 Integrated Master Schedule

In Attachment 19, Integrated Master Schedule, the Offeror shall propose an IMS covering its schedule for contiguous work across all CLINs. Proposals shall structure the tasks, associated activities, and deliverables into CLINs integrated with the priced milestones. The Offeror's IMS shall be consistent with the Offeror's overall DDT&E approach as well as the Offeror's Attachment 13, Milestone Acceptance Criteria and Payment Schedule. Refer to DRD MA-03 for details.

4.4.6.20 Project Management Plan

Refer to 4.4.5.1 Management Focus 1: Organization and Management Approach.

The Project Management Plan (PMP) shall provide a description of the Contractor's management concepts, practices, approaches, plans, and schedules necessary for accomplishing (managing and controlling) the tasks described in the Statement of Work. The PMP shall present those management systems to be utilized to define and delegate task assignments and shall define the roles and organizational relationships of the Contractor, Subcontractors, and Government. The PMP shall cover all aspects of contract and subcontract management for the contract. The PMP shall provide information giving the Government insight into staffing, organizational structure, approaches, and processes used to manage activities across the contract. The PMP shall describe the methods the Contractor will employ to provide government data accessibility and deliverables.

The PMP shall identify and describe Control Plans that will be used in executing the SOW tasks. Control plans can either be a part of the PMP or separate stand-alone documents referenced in the appropriate part of the PMP. In addition to the information described above, the PMP shall include, at a minimum, the following items:

a. Descriptions of the management approaches used to accomplish and monitor Contractor and subcontractor tasks.

b. Description of roles and responsibilities of the Contractor's key personnel.

c. Contractor Systems Engineering processes and tools used to implement the technical effort and document the overall technical approach, maintain integrity between NASA and Contractor requirements to the Contractor verification plans, and to transition the products through the lifecycle (for both Contractor and subcontractor efforts).

d. Management approach to routinely review and address cost, schedule, technical progress, concerns, and issues.

e. Description of major technical and milestone reviews, their purpose, and performance reporting to NASA in preparation for these reviews.

f. Communication Plan, including but not limited to a description of the overall interaction policy and approach, key interaction milestones, flexibility and adaptability of interactions, the process for continuous improvement and incorporations of lessons learned, and determination and implementation of cause and corrective actions.

g. Approach to interfaces with the Government, other Contractors, and/or other entities that are necessary and pertinent to the accomplishment of contractual tasks, including such things as data, analyses, equipment, software deliverables, schedules, interfaces, and other technical/managerial interactions.

h. Approach to the establishment and management of subcontracts.

i. Description of the Contractor's acquisition strategy, including make/buy decisions and rationale.

j. Description of facility usage in support of the contract.

k. Performance Assessment Plan including, at a minimum:

1. Definition of performance assessment metrics that will be used to communicate to NASA the progress of the Contractor's efforts against the project baseline plan.

2. Description of management systems and processes used to implement the plan including the developing, timely gathering, compiling, maintaining, auditing, analyzing, reporting, and providing management review of performance metrics.

3. Description of the Technical Performance Parameters (TPPs) selected for monitoring during the design and development.

l. Schedule performance reporting plans which include schedule reserves.

m. Discuss approach to data rights and intellectual property (IP). Identify any limited data rights or restricted computer software issues, especially in the context of what the various corporate team members will provide. Explain how licensing agreements will be negotiated with vendors and how that data/IP will be treated, specifically identifying any requested special license agreements.

NOTE: It is not intended that this plan duplicate other plans called for in the proposal. This plan shall summarize the overall project and reference or summarize other plans where appropriate and shall reference Contractor internal procedures where applicable.

4.4.6.21 Mission Operations and Mission Systems Plan

Refer to section 4.4.3.5 Technical Focus 5: Launch and Mission Operations and DRD OP-003 for details.

4.4.6.22 Risk Management Plan

Refer to 4.4.5.3 Management Focus 3: Risk Reduction and DRD MA-004 for details.

4.4.6.23 Contractor Concept of Operations

The Offeror shall submit a Contractor Concept of Operations based on the Offeror's design concepts, clarifying operations aspects in more detail than the HLS Concept of Operations provided in Reference Library Attachment A. Refer to DRD SE-009.

4.4.6.24 Reserved

4.4.6.25 Signed Model Contract

The Offeror shall submit a signed model contract with their proposal as Attachment 25. This includes filling in "TBP" (to be proposed) and highlighted areas. Offeror's model contract shall be completely consistent with the other parts of Offeror's proposal. However, if the data included in the model contract is not consistent with the data in the proposal volumes, the model contract will be considered as having precedence over the data included in the proposal volumes.

Where the terms and conditions of the Government's model contract conflict with the other parts of this solicitation, the model contract governs.

4.4.6.26 Responsibility Determination Information

FINANCIAL CAPABILITY ASSESSMENT (SEPT 2020)

For purposes of the Government making a responsibility determination, the Offeror shall submit a Financial Capability Disclosure as proposal Attachment 26, in support of the Government's financial capability assessment.

The Offeror shall demonstrate adequate financial resources to perform the prospective contract or demonstrate an ability to obtain the adequate financial resources, as required by FAR 9.104-1(a).

The Offeror shall submit financial statements for the three most recent and complete fiscal years and the most recent interim accounting period if applicable.

The Offeror shall provide these statements for the Offeror, and the Offeror's parent corporation (if applicable):

- Annual Reports including audit opinions,
- Balance Sheets, Income Statements,
- Statements of Retained Earnings, and
- Statements of Cash Flows.

Offerors shall clearly label all financial statements as audited or un-audited and the date, if applicable, of any certification of the financial statements by the responsible company official; and clearly disclose and explain all off-balance sheet arrangements and related party transactions.

If the Offeror is a newly established company without financial statements, it shall provide historical tax returns and projected income statements, balance sheets and cash flows.

If a teaming arrangement, joint venture, or other business combination is contemplated, the Offeror shall provide a copy of the teaming arrangement and shall disclose each participant's responsibility for financial management of the venture, funding requirements, limitation of liabilities, and any other information which describes the business arrangement.

The Offeror shall submit details of both internal and external funding mechanisms, including any proposed investments, letters of commitment from investors, and available lines of credit.

The Offeror shall provide all bank term sheets or loan covenants agreements.

For Offerors with parent or holding companies, the Offeror shall include the parent company's or holding company's guarantee of all necessary and required resources including financing to assure the Offeror's full, complete, and satisfactory performance of the contract.

Finally, depending upon whether the Offeror is privately or publicly-held, the Offeror's Financial Capability Disclosure shall also include the following additional information to support the Government's financial responsibility determination:

Privately-Held:

1. Certificate or Articles of Incorporation and Bylaws, including all amendments.
2. Legal entity structure, function of all divisions, subsidiaries, or affiliated entities.
3. A management and organizational chart listing executives and officers.
4. List of all options, warrants, and other rights to acquire equity securities.

Publicly or Privately-Held:

1. Schedule of insurance policies in effect covering property of the Company and any other insurance policies in force.
2. Comparison of planned corporate fiscal year budget to actual (summary and detail) for last fiscal year and current fiscal year to date.
3. Capital budget.

If the Offeror proposes as a joint venture or consortium, the Offeror shall provide a Financial Capability Disclosure for all principal member companies or organizations.

Note: In addition to the information provided in Attachment 26, Offerors are hereby notified that the Government may also use the Offeror's Expenditure Profile (proposal Attachment 34) or any other component of its milestone payment approach (including Attachment 13, Milestone Acceptance Criteria and Proposed Payments) as additional sources of data when making its responsibility determination.

4.4.6.27 Proposed Alternate Standards

As described above in Section 4.3.2 Requirements and Standards, the following standards are to be included in a standards adjudication process:

- Standards referenced in the following appendices of Sustained Phase HLS Program SRD (HLS-RQMT-006):
    - APPENDIX B SAFETY, RELIABILITY, AND MAINTAINABILITY STANDARDS
    - APPENDIX C HUMAN HEALTH AND MEDICAL STANDARDS
    - APPENDIX D DESIGN AND CONSTRUCTION STANDARDS
    - APPENDIX E SUB SYSTEM REQUIREMENTS
- Standards referenced in the following appendices of HDL System Requirements Document (HLS-RQMT-007)"
    - APPENDIX B SAFETY, RELIABILITY, AND MAINTAINABILITY STANDARDS
    - APPENDIX C HUMAN HEALTH AND MEDICAL STANDARDS

- APPENDIX D DESIGN AND CONSTRUCTION STANDARDS

- Artemis Flight Operations Standards (JSC-35191)
- Artemis Campaign Development MORD (ACD-52105)

The Offeror's proposal shall:

(1) Demonstrate that the proposal meets or exceeds these NASA standards;

(2) Employ an alternative approach as adjudicated with the HLS Program during execution of Base period contracts of Appendix H (Exception: this option is not available for Appendix C: Human Health and Medical Standards (RQMT 006 and 007), and Appendix E: Sub System Requirements (RQMT 006 only);

(3) Employ another alternative approach to the standards that the Offeror asserts is equivalent in outcome, with a thorough explanation of such equivalency and a rationale in support of this approach in lieu of NASA's specification (i.e., a "meets the intent of" approach).

In its *Proposed Alternate Standards* proposal attachment, the Offeror shall identify each NASA standard for which it proposes to use an alternative approach (options 2 and 3 above), for the development of their Integrated Lander and HDL, and then provide the proposed alternate standard that the Offeror will follow instead. In other words, every instance of the Offeror's approach that falls into category no. 2 or 3 in the scheme above should be specified in the *Proposed Alternate Standards* attachment.

As corresponding content to each instance of an Offeror-proposed alternate standard or approach, the Offeror shall provide the explanation and rationale required by nos. 2 and 3, above. Keeping ease of evaluation for the Government in mind, the Offeror may provide this explanation and rationale in the manner of its choosing (e.g., a cover sheet(s) for each alternate standard or approach, an appendix to each alternate standard or approach, etc.).

As a cover sheet to this attachment overall, the Offeror shall provide a simple listing of all of the NASA standards to which it is proposing to not meet or exceed. In other words, for every NASA standard for which the offeror will not adhere to item no. 1 above, that standard should be indicated as such by listing it on the cover sheet to the *Proposed Alternate Standards* attachment.

The Offeror's overall technical approach in Volume I and related technical proposal attachments should reflect its proposed use of alternate standards and should specifically reference these items when doing so would add clarity to the proposal overall.

4.4.6.28 Human Systems Integration Plan

Refer to section 4.4.3.3 Technical Focus 3: Verification, Validation, and Certification and DRD HS-003.

4.4.6.29 HLS Integrated Lander System Specification

Refer to section 4.4.3.3 Technical Focus 3: Verification, Validation, and Certification and DRD SE-001. For proposals, please include:

- Scope of the specification shall include requirements and verification methods to address the Functional and Performance Requirements from Section 4 of HLS-RQMT-006 in Attachment F – Requirements
- Flowdown of requirements shall be down at least one level, to separately launched Integrated Lander Elements
- A separate Concept of Operations section is not required (for proposals, Attachment 23, Contractor Concept of Operations, should suffice)

4.4.6.30 Software Verification, Validation, and Certification Plan

Refer to section 4.4.3.3 Technical Focus 3: Verification, Validation, and Certification and DRD SW-001.

4.4.6.31 Assembly, Integration, and Test Plan

Refer to section 4.4.3.3 Technical Focus 3: Verification, Validation, and Certification and DRD SE-005.

4.4.6.32 Software Plan

Refer to section 4.4.3.2 Technical Focus 2: Development, Schedule, and Risk Mitigation and DRD SW-002.

4.4.6.33 Risk Reports

Refer to section 4.4.3.2 Technical Focus 2: Development, Schedule, and Risk Mitigation and DRD MA-005.

4.4.6.34 Expenditure Profile

The Offeror shall provide an expenditure profile that gives the Government insight into the Offeror's total proposed price as phased out by quarter. Do not provide a cost breakdown. The Offeror shall provide information into the level of Offeror investment in the contract throughout performance. If necessary, the Offeror's expenditure profile may also reference information contained within its Corporate Contribution Worksheet and Narrative (Attachment 3) (see 4.4.6.3).

4.4.6.35 Key Facilities and Equipment

Refer to 4.4.3.2 Technical Focus 2: Development, Schedule, and Risk Mitigation for details.

4.4.6.36 Reserved

4.4.6.37 Reserved

4.4.6.38 Reserved

4.4.6.39 Reserved

4.4.6.40 Reserved

4.4.6.41 HDL System Specification

Refer to section 4.4.3.3 Technical Focus 3: Verification, Validation, and Certification and DRD SE-008. For proposals

- Scope of the specification shall include requirements and verification methods to address the Functional and Performance Requirements from Section 4 of HLS-RQMT-007 in Attachment F – Requirements
- Flowdown of requirements shall be down at least one level, to separately HDL Elements
- A separate Concept of Operations section is not required (for proposals, Attachment 23, Contractor Concept of Operations, should suffice)

4.4.6.42 Reserved

4.4.6.43 Technology Readiness Level Report

Refer to section 4.4.3.2 Technical Focus 2: Development, Schedule, and Risk Mitigationand DRD DE-005.

4.4.6.44 System Security Plan

Refer to 4.4.3.1 Technical Focus 1: Technical Design Concept and DRD MA-011 for details.

4.4.6.45 Food Systems Plan

Refer to DRD HS-005 for details.

4.4.6.46 Medical Kit Plan

Refer to DRD HS-006 for details.

4.4.6.47 Reserved

4.4.6.48 Flight Checkout Plan

Refer to DRD OP-004 for details.

5 Proposal Evaluation, Selection, and Award

5.1 Introduction

While NASA reserves the right to change its HLS acquisition strategy at any time, NASA intends to award one contract in accordance with the evaluation process set forth below and otherwise established within this solicitation. The Government may waive informalities and minor irregularities in proposals received.

Offerors are reminded that the Government may evaluate proposals and award a contract without conducting discussions or post-selection negotiations with Offerors (except clarifications as defined in FAR 15.306(a)). Therefore, each Offeror shall submit only one proposal which represents its best approach to meeting the requirements of the solicitation. The Government reserves the right to conduct discussions or post-selection negotiations if the Contracting Officer later determines them to be necessary.

The Government will conduct evaluation of proposals in accordance with the process described in this Appendix P and will not conduct evaluation of proposals in accordance with the process described in the omnibus BAA. Offerors should disregard sections 5 and 6 of the omnibus BAA; sections 5 and 6 of the omnibus BAA are not applicable to this solicitation.

5.2 Proposal Evaluation

5.2.1 General

The Government is conducting this procurement as an “other competitive procedure.” NASA will not conduct a trade-off amongst proposals. Rather, each proposal will be evaluated on its own individual merits.

Generally, the Government will evaluate the Offeror’s understanding of and approach to meeting all of the requirements and goals of this solicitation. The Government will evaluate the degree to which the proposal demonstrates the Offeror’s in-depth knowledge of the required engineering processes, procedures, and tools to successfully perform the tasks on schedule, and clear understanding of current NASA requirements, goals, policies, and procedures affecting such tasks.

For all of the following evaluation criteria, the Government will evaluate the credibility, feasibility, effectiveness, comprehensiveness, suitability, risk, completeness, adequacy, and consistency of the Offeror’s unique proposed approach, as well as its ability to successfully meet the technical, management, schedule, and all other requirements and goals of this solicitation.

The Government will base its evaluation on the information presented in the Offeror's proposal. Data previously submitted, or presumed to be known (e.g., data or services previously submitted or performed for the Government), will not be considered as part of the proposal unless entirely incorporated into and contained within the proposal.

Offerors are notified that NASA, prior to making a Federal award with a total amount of Federal share greater than the simplified acquisition threshold (currently $250,000), is required to review and consider

any information about the offeror that is in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System—FAPIIS) accessible through the System for Award Management (SAM, https://www.sam.gov) (see 41 U.S.C. 2313). An Offeror may review information in FAPIIS and comment on any information about itself that NASA previously entered and is currently in FAPIIS.

5.2.2 Evaluation Factors and Areas of Focus

Consistent with FAR 35.016(e), the primary basis for selecting a proposal for award shall be technical, importance to Agency programs, and funds availability, as delineated here through the following evaluation factors and areas of focus:

Table 5: Evaluation Factors and Areas of Focus

Evaluation Factor	Area of Focus
Factor 1: Technical Approach, Crew Safety, and Mission Assurance	Technical Design Concept
	Development, Schedule, and Risk Mitigation
	Verification, Validation, and Certification
	Insight
	Launch and Mission Operations
	Approach to Early System Demonstrations
Factor 2: Total Evaluated Price	No additional focus areas
Factor 3: Management Approach	Organization and Management
	Schedule Management Process
	Risk Management Process
	Business Approach
	Past Performance
	Small Business Subcontracting
	Data Rights

5.2.3 Relative Importance of Factors

The factors above are listed in descending order of importance to the Government: Factor 1 is more important than Factor 2, and Factor 2 is more important than Factor 3. Factors 1 and 3, when combined, are significantly more important than Factor 2.

Within Factors 1 and 3, all Areas of Focus are considered in totality to arrive at a single adjectival rating for each factor. Areas of Focus will not receive their own adjectival ratings. In determining adjectival ratings for Factors 1 and 3, all Areas of Focus will be considered as approximately of equal importance within their respective Factor.

5.2.4 Ratings Definitions

5.2.4.1 Strengths and Weaknesses

For evaluation of Factors 1 and 3, the Government will identify strengths and weaknesses as defined below. Elements of the Offeror's proposal that merely meet the Government's requirements will not be eligible for either a finding of a strength or a weakness and will not otherwise be documented in the evaluation. For purposes of evaluating strengths and weaknesses, the Government will consider how an

Offeror's proposed approach affects risk, such as technical risk, risk to meeting the Offeror's proposed schedule, the need for increased Government oversight, or the risk of likelihood of unsuccessful contract performance.

Table 6: Strength and Weakness Definitions

	Definition
Significant Strength	An aspect of the proposal that greatly enhances the potential for successful contract performance and/or that appreciably exceeds specified performance or capability requirements in a way that will be advantageous to the Government during contract performance.
Strength	An aspect of the proposal that will have some positive impact on the successful performance of the contract and/or that exceeds specified performance or capability requirements in a way that will be advantageous to the Government during contract performance.
Weakness	A flaw in the proposal that increases the risk of unsuccessful contract performance.
Significant Weakness	A flaw in the proposal that appreciably increases the risk of unsuccessful contract performance.
Deficiency	A material failure of a proposal to meet a Government requirement or a combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level.

5.2.4.2 Adjectival Ratings

Adjectival ratings definitions as applicable to Factors 1 and 3 are as follows:

Table 7: Adjectival Ratings Definitions

Adjectival Rating	Definition
Outstanding	A thorough and compelling proposal that fully responds to the objectives of the solicitation. Proposal contains strengths that far outweigh any weaknesses.
Very Good	A competent proposal that fully responds to the objectives of the solicitation. Proposal contains strengths which outweigh any weaknesses.
Acceptable	A competent proposal that represents a credible response to the solicitation. Strengths and weaknesses are offsetting or will have little or no impact on contract performance.
Marginal	Proposal does not clearly demonstrate an adequate approach to and understanding of the solicitation objectives. Weaknesses outweigh strengths.
Unacceptable	A seriously flawed proposal that is not responsive to the objectives of the solicitation. The proposal has one or more deficiencies, or multiple significant weaknesses that either demonstrate a lack of overall competence or would require a major proposal revision to correct. The proposal is unawardable.

5.2.4.3 Past Performance Definitions

For the Government's past performance evaluation, each past performance citation will be assessed for relevancy using the following definitions and taking into consideration the effort's size, content and complexity in relation to the requirements of this acquisition.

Table 8: Past Performance Definitions

	Definition
Relevant	Present/past performance effort involved much of the magnitude of effort and complexities this solicitation requires.
Somewhat Relevant	Present/past performance contractual effort involved some of the magnitude of effort and complexities than this solicitation requires.
Not Relevant	Present/past performance effort did not involve any of the magnitude of effort and complexities this solicitation requires.

The Government's past performance evaluation will consider the Offeror's inputs (to include major team members, subcontractors, and suppliers), responses from references, and information available in the Contract Performance Assessment Reporting System (CPARS). The Government may consider, among other things, source of the information, context of the data, and general trends in the Offeror's performance. As part of its evaluation, the Government may supplement the information contained in the proposal with information obtained from Government organizations and personnel, commercial

sources, public information sources, and, if applicable, data gathered during any discussion phase of the evaluation.

In evaluating past performance as an Area of Focus under Factor 3, the Government will make findings of strengths and weaknesses based upon all of the past performance information evaluated by the Government. The Government will not undertake a separate past performance Level of Confidence assessment as set forth in NFS 1815.305(a)(2).

In the case of an Offeror without a record of relevant past performance, or for whom information on past performance is not available, the Government will not evaluate the Offeror favorably or unfavorably on past performance.

5.2.5 Price Evaluation

In performing its price evaluation as described herein, the Government will not assign an adjectival rating nor strengths or weaknesses. The Government will perform its price analysis as follows:

Total Evaluated Price Calculation. The Government will calculate a Total Evaluated Price that it will use for evaluation of Factor 2 – Price. The Total Evaluated Price shall be inclusive of the Offeror's proposed amounts for CLINs 001 and 003 through 008, plus the value of any Optional GFP, plus the value associated with any GTAs, plus the minimum IDIQ obligations (see Attachment P, Pricing Template). As noted above, when an Offeror, as part of its proposal, proposes to use one or more items of optional GFP, the Total Evaluated Price will be adjusted by applying, for evaluation purposes only, the value of such Government property as specified by NASA. Similarly, when an Offeror, as part of its proposal, proposes to perform a portion of the work on-site at one or more NASA facilities using NASA resources to do so (as memorialized in one or more GTAs), the Government will adjust the Total Evaluated Price by applying, for evaluation purposes only, the value of all such GTAs.

Note that Total Evaluated Price as an evaluation factor is different than and evaluated independently of "funding availability." Refer to Section 5.3.1.3 Selection Official, for additional information on how funding availability may impact award decisions.

Price Reasonableness. The Government will evaluate the overall price reasonableness of the Total Evaluated Price using price analysis techniques identified in FAR 15.404-1(b).

Balanced Pricing. In accordance with FAR 15.404-1(g), the Government will perform an analysis to determine if the total evaluated price is unbalanced among the proposed CLINs. The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between CLINs or if the prices proposed are materially unbalanced between milestone payments. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more CLINs or milestone payments is significantly overstated or understated as indicated by the application of cost or price analysis techniques. Payments related to long-lead items for early milestones should be clearly identified. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

In addition, using the Offeror's Expenditure Profile (proposal Attachment 34) as a reference point, the Government will evaluate the Offeror's proposed milestone payment amounts to ensure that these amounts are commensurate with the value of the performance event or performance criterion and are not expected to result in an unreasonably low or negative level of Contractor investment in the contract.

Advance Payments. The Government will not make advance payments; proposals containing an advance payment are ineligible for contract award. This advance payment prohibition applies to proposed CLIN payment amounts and, separately, to proposed milestone payment amounts within those CLINs. Offerors are reminded that this solicitation includes FAR 52.232-28, Invitation to Propose Performance-based Payments, which directs offerors to FAR 32.1004 for appropriate criteria for establishing performance bases and performance-based payment amounts.

5.2.6 Evaluation for Award or Exercise of Options

The Offeror's approach to the work required under Options will be evaluated as part of the Government's evaluation of Offeror's proposal in accordance with the evaluation scheme provided herein. Evaluation of options will not obligate the Government to award or exercise the option(s).

Note that this contract is not subject to FAR 17.2.

5.3 Award

5.3.1 Award Evaluation Process

5.3.1.1 Initial Eligibility Determination

As the first step of the proposal evaluation, the Government will initiate a responsibility determination, and will examine Offerors' proposals to ensure compliance with the Domestic Sourcing Certification.

If an Offeror's proposal is not unambiguously fully compliant with these eligibility requirements, the Government will eliminate that Offeror from further evaluation and that Offeror will be ineligible for award.

5.3.1.2 Source Evaluation Panel

Following the start of the initial eligibility determination, a NASA Source Evaluation Panel (SEP) will evaluate proposals, and, where warranted, assign strengths and weaknesses for Factors 1 and 3. Within Factors 1 and 3, Areas of Focus will not receive their own adjectival ratings. In determining adjectival ratings for Factors 1 and 3, all Areas of Focus will be considered as approximately of equal importance within their respective Factor. When assigning adjectival ratings for Factors 1 and 3, the SEP will evaluate the qualitative nature of all of the findings within each Factor respectively and assign an adjectival rating in accordance with the definitions provided within this BAA. In undertaking this aspect of the evaluation, the SEP will consider the qualitative details of each applicable finding to identify an appropriate adjectival rating; the SEP will not simply count or otherwise mechanically tally the findings as part of its methodology to arrive at a particular overall adjectival rating. Rather, adjectival ratings will be based upon a holistic assessment of the assigned findings and will be supported by an accompanying narrative.

The SEP will also evaluate proposals for Factor 2 (Total Evaluated Price) as described above. The SEP will then present the results of its evaluation to the Selection Official.

5.3.1.3 Selection Official (SO)

The Selection Official (SO) is responsible for making a selection and final contract award decision based on applying the evaluation, selection, and award methodology as described in this solicitation. The SO will not conduct a trade-off amongst proposals. Rather, the SO will consider each proposal on its own individual merits, and will select for award one or more proposals that individually each present value to the Government and that optimize NASA's ability to meet its objectives as set forth in this solicitation.

Contract award will be dependent upon both funding availability and evaluation results. After considering the qualitative attributes of and the SEP's evaluation results for each Offeror's proposal, the

SO will exercise independent judgment to make selection and award determinations. In evaluating whether a proposal presents value and meets NASA's stated objectives, the SO may consider whether the proposal allows the Agency to effectuate its acquisition strategy, within the limits of NASA's available funds, to enable the further development of sustainable, cost-effective lunar transportation services for NASA's long-term needs. Plainly stated, independent of the evaluation for Total Evaluated Price, if funding availability otherwise constrains award decisions among selectable Offerors, the SO may select a less highly evaluated Offeror that fits within available funding.

The SEP and the SO may engage in multiple rounds of consultation with one another before the SO makes final selection and award decisions. The SO may, after receiving presentations from the SEP, ask the panel to further examine or re-examine certain aspects of proposals or its evaluations thereof. Finally, the SO may make initial, non-binding selections of an Offeror or Offerors for the purpose of having the Contracting Officer engage in post-selection negotiations with one or more Offerors as defined in this solicitation.

Offerors are hereby notified that proposals evaluated as having one or more deficiencies are unawardable. If the SEP identifies a deficiency within any Offeror's proposal at any time before selection or award, and the SO concurs with that deficiency, the Government reserves the right to engage in discussions or post-selection negotiations with only those Offerors whose proposals have not been identified as having one or more deficiencies.

5.3.2 Notification of Award

A written award or acceptance of proposal mailed or otherwise furnished to the successful Offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

5.3.3 Proposal Evaluation Feedback

This solicitation is a BAA. BAAs are not negotiated procurements conducted on the basis of competitive proposals. Accordingly, NASA is not required to hold debriefings with Offerors who submit proposals in response to this solicitation. Following contract award, NASA will provide informal feedback to any Offeror upon request. However, no formal "debriefing" (see FAR 15.506) will be provided.

6 Award Information

6.1 Contract Award

The Government intends to award one contract, but reserves the right to award one, multiple, or none of the proposals received in response to this Appendix. The overall number of awards will be dependent upon funding availability and evaluation results. NASA may evaluate and select for award, based on initial proposals, without discussions or post-selection negotiations. However, NASA reserves the right to conduct discussions or post-selection negotiations if deemed in the best interest of the Government. Accordingly, each Offeror should submit its initial proposal to the Government using the most favorable terms from a price and technical standpoint.

6.2 Period of Performance:

The total contract period of performance, including Options is anticipated to be up to five years. NASA may elect to grant a no-cost extension if it is deemed in the best interest of the Government.

6.3 Award Date:

Award is anticipated in May 2023. The Offeror's proposal should be based on this anticipated award date. Any reduced appropriations or continuing resolution may affect NASA's ability to award selected Offerors or award options.

6.4 Funding Allocation:

Funds are not currently available for this solicitation but are expected to become available on or before contract award. The Government's obligation to make an award is contingent upon the availability of appropriated funds from which payments can be made and the receipt of proposals that NASA determines are acceptable.

As a multi-year program, specific funding allocations may vary from expectations from year to year. For years in which there are significant differences between expectations and allocated funding, including potentially the year of the contract award, NASA anticipates negotiating revised Milestone Acceptance Criteria and Payment Schedules.