Source Selection Statement

Appendix H: Human Landing System, Option A
Next Space Technologies for Exploration
Partnerships-2 (NextSTEP-2)
NNH19ZCQ001K_APPENDIX-H-HLS

National Aeronautics and Space Administration

April 16, 2021

Introduction

In my role as the Source Selection Authority (SSA) for the National Aeronautics and Space Administration (NASA or Agency) Human Landing System (HLS) Option A procurement, for the reasons set forth below, I have selected Space Exploration Technologies Corp. (SpaceX) for an HLS Option A contract award. This selection statement documents my independent analysis and judgment as the SSA and constitutes my final determination on this matter.

Procurement Description

Building off of the success of NASA's HLS base period contracts, the purpose of the HLS Option A procurement is to further facilitate the rapid development and demonstration of one or more landing systems that will deliver the first woman and first person of color to the Moon. Culminating in a crewed lunar surface landing demonstration mission near the South Pole, the Option A contract scope of work also encompasses demonstration of the aggregation of HLS elements, docking, transfer of crew to HLS in lunar orbit, lunar surface extra-vehicular activity (EVA), and the return of crew and materials from the surface. While the requirements and operations concept for the HLS are specified and managed by NASA, the HLS design, development, test, and evaluation (DDT&E) will be led by the Option A contractor. As part of this public-private partnership, NASA will provide significant support and expertise to the contractor, including the use of specialized NASA facilities, hardware, and personnel. NASA invited offerors to demonstrate their commitment to the public-private partnership by providing a corporate contribution; these corporate contributions not only have the effect of significantly lowering offerors' proposed firm fixed prices, but also show how each offeror intends to leverage its corporate contribution to enable its approach for commercializing HLS capabilities.

It is NASA's vision that the HLS capability demonstrated in the first mission to the lunar surface will evolve into a sustainable commercial transportation system that will enable frequent access to the lunar surface for NASA and other customers. NASA further intends for public and private investments in lunar exploration capabilities to eventually expand to include elements necessary to support prolonged human exploration in order to accomplish increasingly advanced exploration goals, including a human mission to Mars.

Procedural History

There are currently three base period contractors performing research and development in support of their respective human landing systems: Blue Origin Federation, LLC (Blue Origin or Blue), Dynetics, Inc. (Dynetics), and SpaceX. The HLS Option A solicitation (as amended) was released to these contractors on November 16, 2020, consisting of the NextSTEP-2 Appendix H Option A Broad Agency Announcement (BAA) and solicitation attachments A-Q. The solicitation required that proposals be submitted in four volumes: Technical (I); Price (II); Management (III); and Attachments (IV), the latter consisting of 44 distinct proposal attachments. Proposals were due by 3:00 PM CT on December 8, 2020. All three firms submitted timely proposals.

After receipt of proposals, the Source Evaluation Panel (SEP) that I appointed to evaluate Option A proposals, comprised of three sub-panels (one each for Technical, Price, and Management), began its evaluation. The SEP evaluated proposals in accordance with the evaluation procedures established in the HLS Option A solicitation. To fully document its work, the SEP produced a report for each offeror containing all of the SEP's findings, ratings, and other evaluative content. The SEP has provided these reports to me, along with a comprehensive briefing summarizing its evaluation work and conclusions. This briefing provided an opportunity for the SEP to fully explain its final assessment of each of the proposals, and for me and other senior NASA leaders to ask questions and receive answers directly from the Agency experts that comprised the SEP. During this briefing, I asked questions of the SEP in order to ensure I fully apprehended the evaluation results and had a sufficiently in-depth understanding of each offeror's proposal to support making informed selection decisions. I also solicited and considered the viewpoints of other senior advisors in attendance.

On April 2, 2021, I made a determination that it would be in the Agency's best interests to make an initial, conditional selection of SpaceX to enable the Contracting Officer (CO) to engage in post-selection price negotiations with this offeror. This decision was based on NASA's longstanding Option A acquisition strategy of making two Option A contract awards. While it remains the Agency's desire to preserve a competitive environment at this stage of the HLS Program, at the initial prices and milestone payment phasing proposed by each of the Option A offerors, NASA's current fiscal year budget did not support even a single Option A award. Working in close coordination with the CO, it was therefore my determination that NASA should, as a first step, open price negotiations with the Option A offeror that is both very highly rated from a technical and management perspective and that also had, by a wide margin, the lowest initially-proposed price—SpaceX.

The CO thus opened price negotiations with SpaceX on April 2, 2021. As contemplated by the solicitation, the Government instructed SpaceX that it was permitted to change certain price and milestone-related aspects of its proposal (e.g., the Government requested a best and final price, as well as updated milestone payment phasing to align with NASA's budget constraints), but was prohibited from changing content within its technical and management proposals or otherwise de-scoping its proposal in any capacity. SpaceX submitted a compliant and timely revised proposal by the due date of April 7, 2021. Although SpaceX's revised proposal contained updated milestone payment phasing that fits within NASA's current budget, SpaceX did not propose an overall price reduction. After I reviewed this revised proposal and consulted with the SEP Chairperson and CO, it was evident to me that it would not be in the Agency's best interests to select one or more of the remaining offerors for the purpose of engaging with them in price negotiations. Following a final review of the offerors' SEP reports and

SpaceX’s revised pricing proposal, I made final Option A selection and award determinations, as documented herein.

Proposal Evaluation Methodology

For this procurement, NASA utilized a BAA to solicit for firm fixed price proposals. BAAs are not negotiated procurements conducted on the basis of competitive proposals. As such, NASA did not conduct a comparative analysis and trade-off amongst proposals. Rather, each proposal was evaluated on its own individual merits.

Generally, the SEP evaluated each offeror’s proposal as a measure of its understanding of and approach to meeting all of the requirements and goals of the Option A solicitation. The SEP evaluated the degree to which the proposal demonstrated the offerors’ in-depth knowledge of the required engineering processes, procedures, and tools to successfully perform the tasks on schedule, and a clear understanding of current NASA requirements, goals, policies, and procedures affecting such tasks. For all of the enumerated evaluation criteria, the SEP evaluated the credibility, feasibility, effectiveness, comprehensiveness, suitability, risk, completeness, adequacy, and consistency of each offeror’s unique proposed approach, as well as its ability to successfully meet the technical, management, schedule, and all other requirements and goals of the Option A solicitation.

The solicitation established three factors for evaluation: Technical (Factor 1), Price (Factor 2), and Management (Factor 3). These factors are in descending order of importance to NASA: 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, the solicitation established specific areas of focus for evaluation. For each offeror, findings (e.g., strengths, weaknesses) created for the areas of focus were considered in totality by the SEP to arrive at a single adjectival rating for each factor. Areas of focus did not receive their own adjectival ratings. In determining adjectival ratings for Factors 1 and 3, all areas of focus were considered as approximately of equal importance within their respective factor. Table 1 contains the evaluation factors and areas of focus.

Evaluation Factor	Area of Focus
Factor 1: Technical Approach	Technical Design Concept
	Development, Schedule, and Risk
	Verification, Validation, and Certification
	Insight
	Launch and Mission Operations
	Sustainability
	Approach to Early System Demonstrations
Factor 2: Total Evaluated Price	No focus areas
Factor 3: Management Approach	Organization and Management
	Schedule Management
	Risk Reduction
	Commercial Approach
	Base Period Performance
	Small Business Subcontracting Plan
	Data Rights

Table 1: Option A Evaluation Factors and Areas of Focus

For evaluation of Factors 1 and 3, the SEP identified strengths and weaknesses as defined below. Elements of an offeror's proposal that merely met the Government's requirements were ineligible for a finding of either a strength or a weakness. In such cases, the SEP did not create findings.

Finding	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.

Table 2: Option A Findings Definitions

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

Adjectival Rating	Definition
Outstanding	A thorough and compelling proposal of exceptional merit that fully responds to the objectives of the BAA. Proposal contains strengths that far outweigh any weaknesses.
Very Good	A competent proposal of high merit that fully responds to the objectives of the BAA. Proposal contains strengths which outweigh any weaknesses.
Acceptable	A competent proposal of moderate merit that represents a credible response to the BAA. Strengths and weaknesses are offsetting or will have little or no impact on contract performance.
Marginal	A proposal of little merit. Proposal does not clearly demonstrate an adequate approach to and understanding of the BAA objectives. Weaknesses outweigh strengths.
Unacceptable	A seriously flawed proposal that is not responsive to the objectives of the BAA. 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.

Table 3: Option A Adjectival Ratings Definitions

For one of the Areas of Focus within Factor 3, Base Period Performance, the SEP performed its evaluation in accordance with a special procedure established in the Option A solicitation. This procedure involved evaluation of NASA's Base Period Performance Record (BPP-R) for each offeror, documenting its performance from the beginning of base period contract performance until October 2020, as well as evaluation of the Base Period Performance Narrative (BPP-N) submitted by each offeror with its Option A proposal. For this Area of Focus, offerors were eligible to receive one of four base period performance ratings enumerated and defined within the Option A solicitation.

The SEP's price evaluation consisted of four components: (1) A calculation of each offeror's Total Evaluated Price (evaluation Factor 2); (2) an evaluation of each offeror's price reasonableness; (3) an evaluation of each offeror's balanced pricing; and (4) an evaluation of whether the offeror's proposal contained advance payments. The evaluation of offerors' prices did not result in the assignment of any adjectival rating nor any strengths or weaknesses. The SEP calculated each offeror's Total Evaluated Price by summing the offeror's proposed firm fixed price amounts for CLINs 005, 009, and 010; the value of certain Government contributions to the proposed effort, including Optional Government Furnished Equipment or Property and the value of any

Government Task Agreements; and the minimum IDIQ obligations as provided in the Option A solicitation.

Source Selection Determinations

Introduction

I have thoroughly reviewed the evaluation report for each offeror prepared by the SEP. It is my determination that the evaluation results documented therein, including the findings, adjectival ratings, narrative bases for each adjectival rating, and the Total Evaluated Prices were created in accordance with the evaluation criteria and methodology set forth in the Option A solicitation. Further, it is my determination that this evaluation record has a rational basis, is thoroughly documented, and provides me with information regarding the qualitative merits and drawbacks of each offeror's proposal that is sufficient to support my selection decisions. As such, I fully concur with and adopt the SEP's evaluation record. This record is the basis for all decisions made herein, and such decisions represent my independent judgement as the Agency official solely responsible for selections in this procurement.

In accordance with the Option A solicitation, the SSA is not, as a general matter, tasked with conducting a comparative analysis or trade-off amongst proposals. Rather, as the SSA, I am charged with considering each proposal on its own individual merits and selecting 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 the solicitation. As discussed above, one such objective is making two Option A contract awards. NASA's HLS acquisition strategy has been to maintain a competitive environment through the initial crewed lunar demonstrations and beyond, thereby creating performance and pricing incentives for contractors at all stages of the HLS Program. By making three HLS base period contract awards that preceded the present Option A source selection, it was NASA's preference (as stated in the Option A BAA) to then down-select from among these contractors to two Option A awardees.

However, when considered in conjunction with the Total Evaluated Prices for each Option A offeror, NASA's fiscal year 2021 appropriations and appropriations indications for future fiscal years that span the Option A period of performance are incongruent with NASA's Option A acquisition strategy. Thus, while not NASA's optimal outcome in this matter, in accordance with section 6.1 of the BAA, NASA is permitted to select for award multiple, one, or none of the Option A proposals. Perhaps most critically, the solicitation provides that "[t]he overall number of awards will be dependent upon funding availability and evaluation results." My selection decisions set forth below are based upon these dual considerations.

Summary of Evaluation Results

The Option A technical and management adjectival ratings as assessed by the SEP are as follows:

	Technical Rating (Factor 1)	Management Rating (Factor 3)
Blue Origin	Acceptable	Very Good
Dynetics	Marginal	Very Good
SpaceX	Acceptable	Outstanding

Table 4: Option A Technical and Management Adjectival Ratings

For Factor 2, SpaceX's Total Evaluated Price of $2,941,394,557 was the lowest among the offerors by a wide margin. Blue Origin's Total Evaluated Price was significantly higher than this, followed by Dynetics' Total Evaluated Price, which was significantly higher than Blue Origin's.

In light of these results, and the funds presently available to the Agency for Option A contract(s), my selection analysis must first consider the merits of making a contract award to the offeror that is most highly rated and has the lowest price—SpaceX—followed by the second most highly rated offeror, Blue Origin, and finally, Dynetics. Below are my analyses for each of these offerors and the accompanying bases for their selection or non-selection for award. For each offeror, I have identified those aspects of its proposal and the SEP's evaluation thereof that I find to be particularly compelling and noteworthy. Note that this selection statement does not identify or describe SEP findings for each offeror with which I concur but that did not represent significant considerations in my analysis or ultimate determinations.

Analysis

SpaceX

Technical Approach

The SEP evaluated SpaceX's proposal as Acceptable for Factor 1: Technical Approach. I agree with this assessment.

Within Technical Area of Focus 1, Technical Design Concept, I agree with the SEP's assignment of a significant strength for SpaceX's proposed capability to substantially exceed NASA's threshold values or meet NASA's goal values for numerous initial performance requirements. I also note the SEP's independent analysis and verification of these attributes, which lends credence to the feasibility of SpaceX's approach to meeting NASA's performance requirements. I find this suite of augmented capabilities and SpaceX's approach to achieving them in a manner that will not comprise its ability to meet NASA's other requirements to be a particularly noteworthy attribute of SpaceX's design with abundant potential benefit for NASA. In particular, SpaceX's quiescent lunar orbit operations capability will allow it to loiter for 100 days prior to rendezvous with the crew vehicle. This capability exceeds NASA's stated goal period of 90 days, which allows for additional flexibility for crew launch in the event unexpected circumstances arise that could delay the commencement of Artemis missions.

Additionally, the scale of SpaceX's lander architecture presents numerous benefits to NASA. First, I find SpaceX's capability to deliver and return a significant amount of downmass/upmass cargo noteworthy, as well as its related capability regarding its mass and volumetric allocations for scientific payloads, both of which far exceed NASA's initial requirements. I also note SpaceX's ability to even further augment these capabilities with its mass margin flexibility. While I recognize that return of cargo and scientific payloads may be limited by Orion's current capabilities, SpaceX's ability to deliver a host of substantial scientific and exploration-related assets to the lunar surface along with the crew is immensely valuable to NASA in the form of enhanced operational flexibility and mission performance. For example, SpaceX's capability will support the delivery of a significant amount of additional hardware, including bulky and awkwardly-shaped equipment, for emplacement on the lunar surface. This has the potential to greatly improve scientific operations and EVA capabilities. The value of this capability is even more apparent when considered with SpaceX's ability to support a number of EVAs per mission that surpasses NASA's goal value and EVA excursion durations that surpass NASA's thresholds. Together, this combination of capabilities dramatically increases the return on investment in terms of the science and exploration activities enabled. And, while I agree with the SEP that the scale of SpaceX's lander also presents challenges, such as risks associated with an EVA hatch and windows located greater than 30 meters above the lunar surface, I find the positive attributes created by this aspect of SpaceX's lander design to outweigh these and other shortcomings as identified by the SEP.

I note that the SEP also assigned SpaceX an additional, separate strength within Technical Area of Focus 1 specifically concerning its science payload delivery and return allocations. It is my assessment that SpaceX received some credit for these augmented capabilities and the flexibilities they create for NASA in the above-discussed significant strength. However, this separate strength focused on SpaceX's unique design attributes that enable the creative use of available space, including its combination of unpressurized and pressurized cargo areas and its stowage plan, which will make efficient use of available space for science payloads and streamline their deployment and sample returns. Thus, I find this specific strength to be noteworthy of its own accord, and I agree with the SEP that the assignment of this standalone strength was appropriate.

In addition, I appreciate that although SpaceX's design has substantially augmented capabilities, these do not come at the expense of heightened risk to mission execution or crew safety. I particularly find SpaceX's strength under Technical Area of Focus 1 for its robust approach to aborts and contingencies to be compelling. This approach contains several key features, including: the application of its excess propellant margin to expedite ascent to lunar orbit in the event of an emergency early return; a comprehensive engine-out redundancy capability; and two airlocks providing redundant ingress/egress capability, each with independent environmental control and life support capabilities that can provide a safe haven for crew. Additionally, SpaceX's design allows for the sourcing of excess propellant, which will provide crew with a large reserve supply of life support consumables in the event of a contingency event. I thus agree with the SEP that SpaceX's design incorporates a variety of capabilities that enable the execution of vital and time-critical contingency and abort operations which provide the crew with flexibilities should such scenarios arise. Collectively, these capabilities mitigate risks and increase the likelihood of crew safety during multiple phases of the mission.

Dovetailing with SpaceX's significant strength under Technical Area of Focus 1 for its exceedance of NASA's performance requirements is SpaceX's corollary significant strength within Technical Area of Focus 6 (Sustainability) for its meaningful commitment to, and a robust yet feasible approach for achieving, a sustainable capability through its initial design. Here, I note that the SEP closely analyzed SpaceX's proposal and was able to independently substantiate its claimed performance capabilities. Thus, I agree with the SEP's assignment of a significant strength in this area and concur with the SEP's basis for this finding. It is of particular interest to me that, for its initial lander design, SpaceX has proposed to meet or exceed NASA's sustaining phase requirements, including a habitation capability to support four crewmembers without the need for additional pre-emplaced assets such as habitat structures. SpaceX's initial capability also supports more EVAs per mission than required in the sustaining phase, along with an ability to utilize two airlocks and other logistics capabilities to enhance EVA operations while on the surface. And, as previously mentioned, SpaceX's cabin volume and cargo capability enable a myriad of endeavors that will ensure a more sustainable human presence on the lunar surface. Moreover, I note that SpaceX's capability contemplates reusable hardware, leverages common infrastructure and production facilities, and builds from a heritage design with commonality in sub-systems and components across its different variants. The collective effect of these attributes is that SpaceX's initial lander design will largely obviate the need for additional re-design and development work (and appurtenant Government funding) in order to evolve this initial capability into a more sustainable capability. While I acknowledge that some development and technical risk necessarily accompany SpaceX's innovative approach to designing a capability that is sustainable from the outset, I find that SpaceX has provided a feasible path to executing on this capability. Accordingly, I conclude that the significantly enhanced operational flexibility and mission performance that SpaceX offers, and complementary potential for resultant long-term affordability, present immense value for NASA for lunar and deep space exploration activities.

Finally, within Technical Area of Focus 7, Approach to Early Systems Demonstrations, I agree with the SEP's assignment of a significant strength for SpaceX's robust early system demonstration ground and flight system campaign, which focuses on the highest risk aspects of its proposed architecture. This will allow SpaceX to isolate and address performance and operational issues early in its development cycle, which will meaningfully inform the maturation of its capability and increase overall confidence in its performance abilities.

While I find the positive aspects of SpaceX's technical approach to be notably thoughtful and meritorious, these aspects are, however, tempered by its complexity and relatively high-risk nature. Of concern here is the SEP's assignment of a significant weakness within SpaceX's proposal under Technical Area of Focus 5, Launch and Mission Operations, due to SpaceX's complicated concept of operations. SpaceX's mission depends upon an operations approach of unprecedented pace, scale, and synchronized movement of the vehicles in its architecture. This includes a significant number of vehicle launches in rapid succession, the refurbishment and reuse of those vehicles, and numerous in-space cryogenic propellant transfer events. I acknowledge the immense complexity and heightened risk associated with the very high number of events necessary to execute the front end of SpaceX's mission, and this complexity largely translates into increased risk of operational schedule delays. However, these concerns are tempered because they entail operational risks in Earth orbit that can be overcome more easily than in lunar orbit, where an unexpected event would create a much higher risk to loss of mission.

Indeed, despite SpaceX's concept of operations relying on a high number of launches, there is some flexibility in the timing of its required propellant tanker launches prior to the time-critical HLS Starship. This flexibility will allow NASA to time its crewed mission only after SpaceX has successfully achieved its complex propellant transfer activities and is ready to commence launch of its lunar lander. It is this flexibility that allays my concerns with regard to the admittedly riskier aspects of the first phase of SpaceX's concept of operations. And, I further acknowledge that bounding more of the risk associated with these activities within the first phase of SpaceX's mission actually enables the use of a single-element lander for the crewed portion of its mission. By decoupling the launch of propellant from the launch of the lander, SpaceX was able to design a larger lander which will not require any on-orbit aggregation or integration activities (an attribute for which the SEP assigned a strength under Technical Area of Focus 1). Moreover, I note that SpaceX's complex rendezvous, proximity operations, docking, and propellant transfer activities will occur in Earth orbit rather than at a more distant point in lunar orbit. In my opinion, the closer location of these complex operations mitigates risk to some degree; as noted above, issues that occur in Earth orbit are more easily overcome or corrected compared to those that occur in lunar orbit. Finally, I note that SpaceX has built in some margins for delay, and that its capability allows for some delay in propellant delivery without the need for a complete mission restart. Thus, while I concur with the SEP that numerous attributes of SpaceX's launch campaign create a significant risk to execution, enduring these operational risks on the front end of the mission is, in my opinion, a more palatable level of risk that has commensurate potential benefits.

Additionally, I note the SEP's evaluated weakness within Area of Focus 2, Development, Schedule, and Risk regarding the development and schedule risk accompanying SpaceX's highly integrated, complex propulsion system. Several sub-systems that comprise SpaceX's propulsion system are currently at a state of design that will require substantial maturation. The complexity of this system, coupled with the level of development and testing activities that must occur with relatively little margin available in SpaceX's proposed schedule, introduces risk. Yet SpaceX's proposal acknowledges this risk and, more importantly, provides a thorough proposed approach to achieving this development. Thus, I concur with the SEP's conclusion that this risk constitutes a weakness, but not a significant weakness, within SpaceX's proposal.

In light of my assessment above, and in consideration of SpaceX's remaining evaluation record pertaining to this factor, I concur with the SEP that while SpaceX's technical proposal is of moderate merit, and represents a credible response to the BAA objectives, the qualitative attributes of SpaceX's aggregated strengths and its aggregated weaknesses are offsetting and that commensurate risk accompanies the meritorious aspects of SpaceX's technical approach. In particular, SpaceX's proposal has several attractive technical attributes, including a suite of augmented capabilities, a feasible approach for a sustainable design for its initial system, and an aggressive testing plan that will buy down risk. Yet SpaceX's technical approach has countervailing weaknesses, including its complex concept of operations and the development risk associated with its propulsion system. Therefore, I find that the SEP properly rated SpaceX's technical proposal as Acceptable.

Price

I reviewed the SEP's calculation of SpaceX's Total Evaluated Price and conclude that it is accurate. Based on the SEP's utilization of multiple price analysis techniques set forth in FAR 15.404-1(b) and (g), I have similarly high confidence in its conclusions that SpaceX's price is fair, reasonable, balanced, and that SpaceX's proposal contains no advance payments. Finally, the SEP compared SpaceX's proposed milestone payments to monthly expenditures and concluded that contractor investment and risk-sharing were not unreasonably low or negative during performance. I concur with each of these conclusions. As previously discussed, the Contracting Officer engaged in limited price negotiations with SpaceX that resulted in some revisions to SpaceX's proposal, but SpaceX's revised proposal did not alter the price evaluation results summarized above.

Management Approach

The SEP evaluated SpaceX's proposal as Outstanding for Factor 3: Management Approach. I agree with this assessment.

The positive attribute of SpaceX's management proposal that I found to be the most compelling is its exceedingly thorough and thoughtful management approach and organizational structure within Area of Focus 1, Organization and Management. I concur with the SEP that this represents a significant strength in SpaceX's management approach. In particular, I acknowledge SpaceX's approach to leveraging its deep bench of personnel and expertise, its prior program management experience, and lessons learned from those experiences that SpaceX will bring to bear in its management of the HLS effort. Similarly, I find attractive SpaceX's proposal to replicate and utilize management processes, toolsets, and software that have been effectively employed on other, similar programs and will ensure effective traceability and tracking of progress on the HLS contract. I concur with the SEP that together, these attributes will help reduce SpaceX's schedule risk and allow for more effective management of its contractual progress.

The SEP also assigned SpaceX a strength within Management Area of Focus 1, Organization and Management, for its effective organizational and management approach to facilitating contract insight in a manner that follows its broader Starship development effort and operational activities. This approach, which does not draw illusory distinctions between HLS activities and other efforts utilizing the common Starship architecture, is critical because SpaceX's HLS effort and its development of commercial spaceflight capabilities are inextricably intertwined. I find that this aspect of SpaceX's proposal will effectuate immediate and meaningful insight into SpaceX's vehicles, systems, facilities, operations, and organizational practices, and will also permit NASA insight to evolve as SpaceX's Starship effort evolves.

Within Management Area of Focus 4, Commercial Approach, I found SpaceX's significant strength for its comprehensive plan to leverage its HLS contract performance to advance a multi-faceted approach to commercializing its underlying Starship capability to be a highlight of its management proposal. SpaceX's plans to self-fund and assume financial risk for over half of the development and test activities as an investment in its architecture, which it plans to utilize for numerous commercial applications, presents outstanding benefits to NASA. This contribution not only significantly reduces the cost to the Government (which is reflected in SpaceX's lower price), but it also demonstrates a substantial commitment to the success of HLS public-private partnership commercial model and SpaceX's commitment to commercializing technologies and abilities developed under the Option A contract.

In light of my assessment above, and in consideration of SpaceX's remaining evaluation record pertaining to this factor, I concur with the SEP that SpaceX's management approach is of exceptional merit and fully responsive to the objectives of the solicitation. Like the SEP, I find that the qualitative attributes of SpaceX's aggregated strengths, including its rating of High for its Base Period Performance, far outweigh the qualitative attributes of its evaluated weaknesses, which were relatively minor. Therefore, I agree that SpaceX's proposal was properly rated as Outstanding under Management Approach.

Selection Rationale

My selection determination for SpaceX's proposal is based upon the results of its evaluation considered in light of the Agency's currently available and anticipated future funding for the Option A effort. In making my selection, I examine the totality of the SEP's evaluation of SpaceX's proposal across the Option A solicitation's evaluation criteria, as well as the relative weighting of those criteria as stated therein. This analysis leads me to the conclusion that SpaceX's proposal is meritorious and advantageous to the Agency, and that it aligns with the objectives as set forth in this solicitation. Specifically, I conclude that SpaceX's acceptable technical approach coupled with its outstanding management approach provide abundant value for NASA at its Total

Evaluated Price. Moreover, as a result of the price negotiations discussed above, the Agency's budget now permits the award of a contract to SpaceX. Therefore, I select SpaceX's proposal for an Option A contract award.

Blue Origin

Technical Approach

The SEP evaluated Blue Origin's proposal as Acceptable for Factor 1: Technical Approach. I agree with this assessment.

As an initial matter, I note that the SEP did not identify any significant strengths within Blue Origin's technical proposal. Nonetheless, Blue Origin's proposal has several attractive technical attributes. Within Technical Area of Focus 1, Technical Design Concept, the SEP evaluated Blue Origin's proposal as having two strengths and two significant weaknesses that I find to be particularly notable. First, the SEP assigned Blue Origin a strength for exceeding certain functional and performance requirements for its initial demonstration mission. Some of these include a landed cargo capacity of 850 kg, meeting NASA's goal for this requirement and thereby offering flexibility for manifesting equipment to support science and EVA operations; having an increased loiter capability in near-rectilinear halo orbit, enabling additional flexibility for SLS and/or Orion launches; exceeding the threshold number of EVAs, allowing for additional flexibility when planning for surface exploration activities and science return; and meeting the goal value for vertical orientation, which will enhance internal operations and improve safety and quality of life for the crew during the surface stay. I agree with the SEP that these proposed capabilities not only exceed NASA's stated requirements, but do so in a manner that would be materially advantageous to NASA in numerous ways during Blue Origin's performance of its demonstration mission.

Blue Origin's second Technical Design Concept strength that I find to be particularly meaningful is its comprehensive approach to aborts and contingencies. This places a priority on crew safety throughout all mission phases. Here, Blue Origin proposes to utilize a combination of off-nominal trajectory planning, reliance on dissimilar elements, and a multi-engine Ascent Element. Blue Origin's concept of operations identifies two types of contingencies (abort and early mission termination) that would apply during critical mission activities, and describes the contingency operations associated with each event. These operations leverage Blue Origin's multi-element architecture to effectuate such operations, particularly during powered descent. Blue Origin's Ascent Element also has a number of abort-related features that are beneficial, including the fact that it is capable of separation, which could provide a safe alternative in the event of failure of its Descent Element. And while the Ascent Element utilizes three engines, it can operate with only two of those engines, providing a one engine-out capability throughout the descent phase. I further appreciate the Ascent Element's use of hypergolic propellants, which helps to ensure engine ignition and rapid initiation of ascent to orbit, thus bolstering the reliability of this critical element of Blue Origin's architecture in the event of an off-nominal event. Finally, Blue Origin proposes a robust surface abort strategy by basing its delta-v budget on a suite of ascent trajectories that vary with surface stay time. I concur with the SEP's conclusion that, collectively, these aspects of Blue Origin's overall approach to aborts and specific abort capabilities will increase safety for the crew throughout all phases of the mission.

But despite these and other strengths of Blue Origin's technical design, I find that it suffers from a number of weaknesses, including two significant weaknesses with which I agree. The first of these is that Blue Origin's propulsion systems for all three of its main HLS elements (Ascent, Descent, and Transfer) create significant development and schedule risks, many of which are inadequately addressed in Blue Origin's proposal. These propulsion systems consist of complex major subsystems that have low Technology Readiness Levels (TRLs) and are immature for Blue Origin's current phase of development. Additionally, Blue Origin's proposal evidences that its Ascent Element's engine preliminary design reviews and integrated engine testing occur well after its lander element critical design reviews, indicating a substantial lag in development behind its integrated system in which the engine will operate. This increases the likelihood that functional or performance issues found during engine development testing may impact other, more mature Ascent Element subsystems, causing additional schedule delays.

Further compounding these issues is significant uncertainty within the supplier section of Blue Origin's proposal concerning multiple key propulsion system components for the engine proposed for its Descent and Transfer Elements. The proposal identifies certain components as long lead procurements and identifies them in a list of items tied to significant risks in Blue Origin's schedule. Yet despite acknowledging that the procurement of these components introduces these risks, Blue Origin's proposal also states that these components will be purchased from a third party supplier, which suggests that little progress has been made to address or mitigate this risk. At Blue Origin's current maturity level, component level suppliers for all critical hardware should be established to inform schedule and Verification, Validation, and Certification approaches, and major subsystems should be on track to support the scheduled element critical design review later this year. Nevertheless, these attributes are largely absent from Blue Origin's technical approach.

Finally, numerous mission-critical integrated propulsion systems will not be flight tested until Blue Origin's scheduled 2024 crewed mission. Waiting until the crewed mission to flight test these systems for the first time is dangerous, and creates a high risk of unsuccessful contract performance and loss of mission if any one of these untested systems does not operate as planned. In summary, I concur with the SEP that the current TRL levels of these major subsystems, combined with their proposed development approach and test schedule, creates serious doubt as to the realism of Blue Origin's proposed development schedule and appreciably increases its risk of unsuccessful contract performance.

Blue Origin's second notable significant weakness within the Technical Design Concept area of focus is the SEP's finding that four of its six proposed communications links, including critical links such as that between HLS and Orion, as well as Direct-to-Earth communications, will not close as currently designed. Moreover, it is questionable whether Blue Origin's fifth link will close. These problematic links result in Blue Origin's proposal failing to meet key HLS requirements during the surface operations phase of the mission. This is significant, because as proposed, Blue Origin's communications link errors would result in an overall lack of ability to engage in critical communications between HLS and Orion or Earth during lunar surface operations. I am troubled by the risks this aspect of Blue Origin's proposal creates to the crew and to the mission overall.

Within Technical Area of Focus 2, Development, Schedule, and Risk, the SEP identified a weakness pertaining to Blue Origin's cryogenic fluid management (CFM) development and verification approach that is of heightened interest to me. I concur with the SEP that this aspect of Blue Origin's proposal creates considerable development and schedule risk. In particular, Blue Origin's choice of cryogenic propellant for the majority of its mission needs will require the use of several critical advanced CFM technologies that are both low in maturity and have not been demonstrated in space. Blue Origin's propellant choice also presents challenges in terms of storage temperature, which only increases the difficulty of maturing the necessary CFM technologies. I fully concur with the SEP's finding that these and other CFM-related proposal attributes increase the probability that schedule delays to redesign and recover from technical performance issues uncovered both in component maturation tests and in system level tests will delay Blue Origin's overall mission and could result in unsuccessful contract performance.

Similarly, several segments of Blue Origin's proposed nominal mission timeline result in either limitations on mission availability and trajectory design and/or over-scheduling of the crew, resulting in unrealistic crew timelines. I agree with the SEP that this represents a weakness within Blue Origin's proposal within the Launch and Mission Operations Area of Focus (Technical Area of Focus 5). Specifically, Blue Origin's proposed Initial Lunar Operations phase duration reduces the number of viable mission dates. Additionally, its proposed descent timeline requires a longer crew day to complete all required tasks. This long descent day is required to enable an EVA after the crew's first sleep period on the Moon. As proposed, Blue Origin's ascent day suffers from similar challenges. In particular, the proposed mission profile requires a jettison EVA to reduce the Ascent Element mass prior to liftoff, but the series of activities required to perform this jettison EVA extend the duration of crew operations for ascent day. Therefore, both descent and ascent days will require the crew to work more hours than are typically scheduled. I share the SEP's concern that this is likely to be very taxing on the crew, which could increase safety risks.

Counterbalancing these mission operations risks are a number of strengths within this area of Blue Origin's proposal, including one that I find to be particularly appealing, which is that Blue Origin proposes to use a launch approach that provides flexibility and minimizes risk. Blue Origin's initial HLS mission requires only three commercial launches. This very low number of required launches lowers the risk of mission failure due to launch anomalies. This risk is further reduced by the fact that Blue's HLS elements are capable of interfacing with multiple commercial launch vehicles (CLVs), leaving Blue Origin with near-term options regarding choice of launch vehicle. Finally, Blue Origin's proposal demonstrates that its architecture closes with an existing CLV. This gives the Government greater confidence in Blue Origin's approach to launch and mission operations. I find that overall, these attributes of Blue Origin's approach meaningfully reduce launch-related risks and therefore increase its likelihood of successful contract performance.

Finally, within Technical Area of Focus 6, Sustainability, the SEP again found that various aspects of Blue Origin's proposal effectively provided a counterbalance when weighed against one another. I agree with this assessment. Here, although the design of Blue Origin's sustainable architecture represents a strength within its proposal, I am particularly concerned with the offsetting weakness for Blue's plan to evolve its initial lander into this sustainable design. While the solicitation does not require sustainable features for the offeror's initial approach, it did require the offeror to propose a clear, well-reasoned, and cost-effective approach to achieving a sustainable capability. Blue Origin proposed a notional plan to do so, but this plan requires considerable re-engineering and recertifying of each element, which calls into question the plan's feasibility, practicality, and cost-effectiveness. Blue Origin's two architectures are substantially different from one another. For example, the changes required for evolving Blue's Ascent Element include resizing the cabin structure to accommodate four crew, thermal control system upgrades, bigger fans, and propellant refueling interfaces. And to accommodate the additional mass of the Ascent Element and to reach non-polar locations, Blue Origin's Descent Element requires a complete structural redesign, larger tanks using a new manufacturing technique, a refueling interface, radiator upgrades, and a performance enhancement to its main engine. The SEP observed that this "from the ground-up" plan is likely to require additional time, considerable effort, and significant additional cost to design and develop new technologies and capabilities, and to undertake re-engineering and re-certification efforts for Blue Origin's sustainable lander elements utilizing new heavier lift launch vehicles and modified operations. I share this concern. When viewed cumulatively, the breadth and depth of the effort that will be required of Blue Origin over its proposed three-year period calls into question Blue's ability to realistically execute on its evolution plan and to do so in a cost-effective manner.

In light of my assessment above, and in consideration of Blue Origin's remaining evaluation record pertaining to this factor, I concur with the SEP that while Blue Origin's technical proposal is competent, of moderate merit, and represents a credible response to the BAA objectives, the qualitative attributes of its aggregated strengths are offset by the countervailing qualitative attributes of its aggregated weaknesses. In particular, Blue Origin's proposal has several attractive technical attributes, including an architecture that closes in three launches and has the flexibility to launch on multiple vehicles from multiple providers, including currently existing launch vehicles. Yet, Blue Origin's technical approach has countervailing weaknesses, including risks to timely development of its complex propulsion and cryo-fluid management systems and a failure to close its communications links. Therefore, I find that the SEP properly rated Blue Origin's technical proposal as Acceptable.

Price

I reviewed the SEP's calculation of Blue Origin's Total Evaluated Price and conclude that it is accurate. Based on the SEP's utilization of multiple price analysis techniques set forth in FAR 15.404-1(b) and (g), I have similarly high confidence in its conclusion that Blue Origin's price is fair, reasonable, and balanced. Finally, the SEP compared Blue Origin's proposed milestone payment amounts to its monthly expenditures and concluded that the contractor's investment was not unreasonably low or negative during performance, and that Blue Origin is thus assuming a fair sharing of risk throughout contract performance. I agree with these conclusions.

However, the SEP did identify two instances of proposed advance payments within Blue Origin's proposal. Pursuant to section 5.2.5 of the BAA, proposals containing any advance payments are ineligible for a contract award. The solicitation's advance payment prohibition applies to proposed CLIN payment amounts and, separately, to proposed milestone payment amounts within those CLINs. Blue Origin's proposal is not compliant with the latter of those two requirements. Specifically, Blue Origin proposed milestones at the outset of its Option A performance that the SEP determined were not commensurate with performance. I concur with the SEP's assessment that these kickoff meeting-related payments are counter to the solicitation's instructions and render Blue Origin's proposal ineligible for award without the Government engaging in discussions or negotiations with Blue Origin, either of which would provide an opportunity for it to submit a compliant revised proposal.

Management Approach

The SEP evaluated Blue Origin's proposal as Very Good for Factor 3: Management Approach. I agree with this assessment.

The positive attribute of Blue Origin's management proposal that I found to be the most compelling is its excellent overall approach to management and its thoughtful organizational structure that is well-suited to its specific HLS architecture. I concur with the SEP that this represents a significant strength in Blue Origin's management approach within Management Area of Focus 1. Notably, Blue Origin proposes a considered approach to parallel management of its vehicle development by assigning an individual organization to each of its three primary systems. In this regard, Blue Origin maximizes the value of teaming with experienced organizations. By making each organization accountable for a major element and empowering those teams to execute rapidly using their own processes and experienced workforce, Blue Origin's approach has the potential to maximize the benefits inherent to having multiple major subcontractors. This parallel management and development of its three primary HLS elements will allow Blue Origin to stay focused on achieving schedule.

In addition, Blue Origin's approach recognizes some of the potential pitfalls that three parallel development efforts by three different organizations can cause, and thoughtfully addresses these types of risks by building in comprehensive cross-organization management tools and teams. For example, Blue Origin proposes cross-program, "badgeless" teams staffed by all partners and led by Blue Origin that will own the technical baseline, integrate individual element systems engineering teams, and define and manage margins across the system. These types of badgeless environments constitute a true organizational partnership across Blue Origin and its major subcontractors, ensuring strong integration and employing best practices for large-scale system development synthesized from the partners' combined experience.

I have concerns, however, with Blue Origin's commercial approach. Here, I agree with the SEP that, in response to Management Area of Focus 4, Blue Origin's proposed approach was incomplete and provided insufficient details to substantiate its claims. The proposal lacks evidence supporting how Blue's commercial approach will result in lower costs to NASA and how it will apply to immediate or future applications for existing or emerging markets beyond just HLS contract performance itself. For example, while Blue Origin proposes a significant corporate contribution for the Option A effort, it does not provide a fulsome explanation of how this contribution is tied to or will otherwise advance its commercial approach for achieving long-term affordability or increasing performance. Similarly, while the second tenant of Blue's commercial approach is related to rapid evolution to sustainable and increasingly affordable services, the proposal lacks detail explaining how this evolution furthers or enables its commercial approach, or how its 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. Moreover, aside from several high level ideas that it would consider pursuing, Blue Origin's proposal did not adequately address how it would leverage contract performance and development efforts accomplished thereunder to stimulate the growth of a viable commercial deep space marketplace. Rather, Blue Origin merely states that HLS-funded technological advances will hasten opportunities for commercial applications and growth, including anticipated marketing and licensing of its innovations, but does not describe specific plans for how it will pursue or lead opportunities to integrate the HLS capabilities into future systems or stimulate the growth of the commercial marketplace. Collectively, these proposal attributes do not constitute a thorough and well-reasoned approach by Blue Origin to utilize its HLS efforts to stimulate the growth of a viable commercial marketplace.

Finally, I note that within Management Area of Focus 7, Data Rights, the SEP identified two weaknesses within Blue's proposal with which I concur and find to be noteworthy. In both cases, Blue's approach to data rights is likely to result in protracted intellectual property (IP) disputes during contract performance and generally creates a high risk that the Government will obtain lower IP licensing rights than it is otherwise entitled to under the contract. First, the SEP observed that Blue's Assertion Notice lacks the specificity required by the solicitation, and further, it fails to make assertions at the lowest practicable and segregable level. The first of these errors leaves the Government unable to verify the validity of some of Blue Origin's assertions, meaning that Blue Origin has proposed to deliver certain data sets with a limited or restricted rights license but has failed to adequately substantiate its basis for doing so. The latter error has a similar result in that Blue Origin proposes to deliver what appear to be overly broad sets of data and software to the Government with limited or restricted rights. By not breaking these sets down to the required level and segregating out only those portions that are truly appropriate to deliver with less than a Government Purpose Rights (GPR) license, this aspect of Blue's proposal is non-compliant with the solicitation's instructions. Blue's proposal further impugns the Government's potential rights in data by proposing to deliver data created in conjunction with NASA with less than a GPR license; this is prohibited by the solicitation. I thus agree with the SEP's finding that multiple conflicting components within Blue Origin's proposal create a situation in which the parties will likely need to engage in protracted negotiations while on contract to ensure that the Government is obtaining all of the IP rights to which it is contractually entitled. 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, but it is my assessment that Blue Origin's proposal is not particularly helpful in achieving this goal and leaves me with concerns about NASA being able to obtain proper rights in data once on contract.

Nonetheless, in light of my assessment above, and in consideration of Blue Origin's remaining management evaluation record, I concur with the SEP that Blue Origin's management approach is of high merit and fully responsive to the objectives of the solicitation. Like the SEP, I find that the qualitative attributes of Blue Origin's aggregated management strengths, including its rating of High for its Base Period Performance, far outweigh the qualitative attributes of its aggregated management weaknesses. Therefore, I agree that Blue Origin's proposal was properly rated as Very Good under Management Approach.

Selection Rationale

My selection determination with regard to Blue Origin's proposal is based upon the results of its evaluation considered in light of the Agency's currently available and anticipated future funding for the HLS Program. Blue Origin's proposal has merit and is largely in alignment with the technical and management objectives set forth in the solicitation. Nonetheless, I am not selecting Blue Origin for an Option A contract award because I find that its proposal does not present sufficient value to the Government when analyzed pursuant to the solicitation's evaluation criteria and methodology.

In reaching this conclusion, I considered whether it may be in the Government's best interests to engage in price negotiations to seek a lower best and final price from Blue Origin. However, given NASA's current and projected HLS budgets, it is my assessment that such negotiations with Blue Origin, if opened, would not be in good faith. After accounting for a contract award to SpaceX, the amount of remaining available funding is so insubstantial that, in my opinion, NASA cannot reasonably ask Blue Origin to lower its price for the scope of work it has proposed to a figure that would potentially enable NASA to afford making a contract award to Blue Origin. As specified in section 6.1 of the BAA, the overall number of Option A awards is dependent upon funding availability; I do not have enough funding available to even attempt to negotiate a price from Blue Origin that could potentially enable a contract award. For these reasons, I do not select Blue Origin's proposal for an Option A contract award.[1]

[1] While it is also the case that Blue Origin's proposal is not awardable as-is in light of its aforementioned advance payments, this is an issue I would endeavor to allow Blue to correct through negotiations or

Dynetics

Technical Approach

The SEP evaluated Dynetics' proposal as Marginal for Factor 1: Technical Approach. I agree with this assessment.

As an initial matter, I note that while the SEP evaluated several positive attributes for Dynetics' technical approach under this factor, none of them resulted in the assignment of a significant strength. However, Dynetics' proposal does contain several attractive characteristics. Within Technical Area of Focus 1, Technical Design Concept, the SEP evaluated Dynetics' proposal as having two strengths that I find to be particularly notable. First, Dynetics' proposed single stage integrated Descent Ascent Element (DAE) lander design requires no in-space integration of lander elements or staging/separation events. This pre-integrated design will also allow for terrestrial testing of the entire system, which will increase the fidelity of testing data generated. I concur with the SEP's conclusion that this design greatly simplifies Dynetics' proposed architecture and its ability to execute. Further, Dynetics' design incorporates several features that are uniquely responsive to NASA's requirements and that will facilitate crew and surface operations. Specifically, Dynetics' low-slung DAE will enable easy access to the lunar surface and will minimize risk of sustaining injuries during ingress and egress operations, particularly while handling scientific samples. This design feature also facilitates the crew's ability to attend to incapacitated crew potentialities with a short translation path from the surface to the crew module. Finally, Dynetics' design includes two crew stations, providing redundancy during operations, as well as large windows that will maximize field of view during approach and landing. I agree that collectively, these design aspects will enhance operational effectiveness and reduce risk to the crew.

However, notwithstanding these aforementioned positive attributes, I find that Dynetics' technical approach suffered from a number of serious drawbacks, and I concur with the SEP's conclusion that these drawbacks meaningfully increase the risk to Dynetics' successful performance of this contract. Of particular concern is the significant weakness within Dynetics' proposal under Technical Area of Focus 1, Technical Design Concept, due to the SEP's finding that Dynetics' current mass estimate for its DAE far exceeds its current mass allocation; plainly stated, Dynetics' proposal evidences a substantial negative mass allocation. This negative value, as opposed to positive reserves that could protect against mass increases at this phase of Dynetics' development cycle, is disconcerting insofar as it calls into question the feasibility of Dynetics' mission architecture and its ability to successfully close its mission as proposed. While Dynetics recognizes and has been actively addressing this issue during its base period performance, its proposal does not provide sufficient details regarding its plan for executing on and achieving significant mass opportunities, especially when in the same breath, the proposal also identifies material additional mass threats. I concur with the SEP that collectively, Dynetics' mass margin deficit at this juncture, coupled with

discussions if I otherwise concluded that its proposal presents a good value to the Government. This, however, is not my conclusion.

insufficient substantiation as to precisely how Dynetics will address this issue, creates a potent risk to successful contract performance.

The SEP also evaluated several other weaknesses within Dynetics' proposal under Technical Area of Focus 1, including two that are of a similar nature and that I consider to be noteworthy. First, Dynetics' proposal did not provide sufficient substantiation regarding the design maturity and performance capabilities of its tanker support spacecraft, which is a cornerstone of its mission architecture and is critical to successful completion of its demonstration mission. Similarly, critical technical details regarding the Mission Unique Logistics Element (MULE) are absent across numerous areas of Dynetics' proposal. In both cases, this dearth of information complicates NASA's ability to verify and validate the feasibility of Dynetics' approach or its ability to close its mission as proposed.

Additionally, the SEP assigned three significant weaknesses to Dynetics' proposal within Technical Area of Focus 2 that are critical to me. First, Dynetics' proposal contained insufficient and inconsistent design and analysis details regarding its proposed cryogenic fluid management (CFM) system and the long-term characteristics for its propellant storage capabilities. Once again, Dynetics' proposal lacked material details as to development testing and analysis of this system to support its maturation, which decreases confidence in its ability to develop this capability according to its proposed schedule. Next, I note that Dynetics' proposed mission sequencing and the significant overlap between its uncrewed landing test and its crewed demonstration mission are inconsistent with and noncompliant with the solicitation's requirements. Therefore, as proposed, Dynetics' uncrewed landing provides limited value, insofar as it will not be able to apply lessons learned from this activity to meaningfully reduce risk to its crewed demonstration. Finally, I note that Dynetics' development schedule is unrealistic overall due to multiple mission-critical subsystems and systems which are at a relatively low level of maturity without sufficient accompanying margin to address inevitable issues as maturation continues as proposed. I concur with the SEP's assessment of these significant flaws which, together, call into question the credibility of Dynetics' proposed approach.

Within Technical Area of Focus 2, the SEP also assigned Dynetics a weakness regarding development risk and relative maturity of its proposed complex propellant transfer capability. This weakness is of heightened interest to me because Dynetics' ability to transfer propellant in this manner is considered to be a key attribute to enable its proposed mission approach. For one, Dynetics' proposal envisages a much more optimistic and mature level of technical readiness for its in-space cryogenic fluid transfer. Moreover, Dynetics' proposal lacks detail concerning operational specifics of this capability and is unclear about key component design attributes. This lack of detail raises questions about Dynetics' ability to address these admittedly significant development challenges and to develop a viable propellant transfer capability on a schedule that aligns with its proposed demonstration mission.

In light of my assessment above, and in consideration of Dynetics' remaining evaluation record pertaining to the Technical Approach factor, I agree with the SEP's overall conclusion that on balance, the nature of multiple problematic significant weaknesses, in tandem with other notable weaknesses, meaningfully outweigh the evaluated meritorious attributes of Dynetics' proposal. In particular, I agree that Dynetics' mass closure issue has substantial ramifications for the feasibility of its proposed architecture. I also acknowledge that Dynetics' proposal contains inconsistencies and lacks key substantiating details in numerous areas, resulting in several thematic weaknesses which cast considerable doubt in my mind as to the proposal's overall credibility. Therefore, I find that the SEP properly rated Dynetics' technical proposal as Marginal.

Price

I reviewed the SEP's calculation of Dynetics' Total Evaluated Price and conclude that it is accurate. Based on the SEP's utilization of multiple price analysis techniques set forth in FAR 15.404-1(b) and (g), I have similarly high confidence in its conclusion that Dynetics' price is fair, reasonable, and balanced. The SEP also reviewed Dynetics' pricing for advance payments and concluded that it did not propose any. Finally, the SEP compared Dynetics' proposed milestone payment amounts to its monthly expenditures and concluded that the contractor's investment was not unreasonably low or negative during performance, and that Dynetics is thus assuming a fair sharing of risk throughout contract performance. I concur with these conclusions.

Management Approach

The SEP evaluated Dynetics' proposal as Very Good for Factor 3: Management Approach. I agree with this assessment.

Within Management Area of Focus 4, Commercial Approach, I note and agree with the SEP's assignment of a significant strength for Dynetics' thoughtful, thorough, and compelling proposal for commercializing its HLS capabilities and capitalizing on the technologies and systems developed under this effort. This includes a plan for leveraging its autonomous logistics platform as a cargo delivery system, establishment of a communications and navigation network, and the active exploration of a commercial lunar payload market. In concert, these attributes of Dynetics' plan, along with its aspirations for the establishment of a propellant depot, will foster a more sustainable presence on the lunar surface and will enable long-term affordability for NASA and other customers of the lunar economy.

Within Management Area of Focus 6, I acknowledge and concur with the SEP's assignment of a significant strength for Dynetics' meaningful commitment to small business utilization. Its plan intends to exceed the solicitation's stated goals (and the Government's expectations), particularly, in the area of high technology areas.

However, I note that the SEP assigned Dynetics' management approach a weakness within Management Area of Focus 1, Schedule Management, due to an evaluated lack of sufficient description regarding its schedule risk analysis plan process, methodology, and application for schedule management purposes, including the creation and utilization of schedule margin. This issue concerned me considering the development schedule issues identified in the SEP's evaluation of Dynetics' technical proposal.

In light of my assessment above, and in consideration of Dynetics' remaining evaluation record pertaining to this factor, I concur with the SEP that Dynetics' management approach is of high merit and fully responsive to the objectives of the solicitation. Like the SEP, I find that the qualitative attributes of Dynetics' aggregated management strengths, including its rating of High for its Base Period Performance, outweigh the qualitative attributes of its aggregated management weaknesses. Therefore, I agree that Dynetics' proposal was properly rated as Very Good under Management Approach.

Selection Rationale

My selection determination for Dynetics' proposal is based upon the results of its evaluation considered in light of the Agency's currently available and anticipated future funding for the Option A effort. In making my selection, I examine the totality of the SEP's evaluation record of Dynetics' proposal across the Option A solicitation's evaluation criteria, as well as the relative weighting of those criteria as stated therein. This leads me to the conclusion that while Dynetics' proposal does have some meritorious technical and management attributes, it is overall of limited merit and is only somewhat in alignment with the objectives as set forth in this solicitation. Specifically, I conclude that Dynetics' marginal technical approach, coupled with its very good management approach, does not provide sufficient value to the Government at its Total Evaluated Price and when considered in light of the Agency's available budget. Therefore, I do not select Dynetics' proposal for an Option A contract award.

Conclusion

In light of the three HLS Option A offerors' evaluation results and in consideration of NASA's available funding, it is my determination that the award of a single Option A contract is in the best interests of the Agency. This contract award is the catalyst for developing a critical element needed for the initial Artemis missions—a human lander—to return astronauts to the Moon, including the first woman to touch the lunar surface. This Option A selection represents a critical step, but is by no means the last step, in NASA's investment in and facilitation of lunar transportation service providers. With this award and NASA's forward efforts for the acquisition of long-term recurring human lunar landing services, NASA is leading a sustainable return to the Moon, and we are doing it with our commercial and international partners to lead innovation and expand our knowledge for future lunar missions, looking towards Mars.

KATHRYN LUEDERS

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