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# United States Senate

COMMITTEE ON THE BUDGET  
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September 20, 2019

The Honorable James F. Bridenstine  
Administrator  
National Aeronautics and Space Administration  
300 E Street S.W., Suite 5R30  
Washington, D.C. 20546

Dear Administrator Bridenstine:

Thank you for your timely response to my inquiries, including the email that you shared with my staff. I appreciate your commitment to implementing the necessary changes to deliver hardware on time and on budget, as well as to ensuring that the National Aeronautics and Space Administration (NASA) remains the leader in exploration for decades to come.

After reading your responses, I still have questions about how NASA is going to contain costs and meet deadlines and request that you provide the following additional information:

1. Please provide detailed cost breakdown analyses of the James Webb Space Telescope (JWST), Space Launch System (SLS), and Exploration Ground Systems (EGS) programs.
  - a. For each program, please provide a breakdown by element or instrument of cost changes from the baseline, including the reasons for cost changes, such as contractor performance issues, technology development delays, or parts delays. Please use the most recent quarterly cost data available and specify what types of future costs have not been calculated.
  - b. In addition, I request that NASA report back to the Committee in fall 2019 on the results of its joint cost and schedule confidence level assessment for the JWST and the likelihood of meeting the March 2021 launch date.
2. It remains unclear why NASA does not have a complete cost estimate for the Orion program.
  - a. Baseline makes it possible to hold programs accountable and compare actuals versus estimates. When the Orion program set its baselines, NASA committed to Congress that it would be ready to launch what is now Artemis 2 in April 2023 at a development cost of \$6.77 billion. At the same time, it set an internal target to be ready in August 2021 with a total development cost of \$6.29 billion. NASA has now shifted its internal target to September 2022 and a development cost of \$7.15 billion, but it has not updated its cost estimate through the baseline date for Artemis 2, citing the difficulty in forecasting “unknown-unknowns.” When does NASA expect to be able to provide an updated cost estimate through the baseline?

- b. Has NASA completed any analysis, such as a schedule risk assessment, to support its determination that a delay in Artemis 1 would not affect Artemis 2? If so, please provide the Committee with a copy of that assessment.
3. It is also unclear why NASA has not established baselines for future missions. According to the Government Accountability Office (GAO), "EGS and SLS do not have a cost and schedule baseline that covers activities beyond the first planned flight, and Orion does not have a baseline beyond the second planned flight." GAO further noted it has "previously reported that without transparency into these estimates, NASA does not have the data to assess long-term affordability and Congress cannot make informed budgetary decisions."
  - a. Given that missions have been defined for Artemis 2 and 3, can you provide the Committee with cost estimates for SLS to support these missions and the cost estimate for Orion to support Artemis 3?
  - b. In addition, when do you expect to have new leadership for Human Exploration Operations in place, and how soon thereafter can we expect NASA to provide a new schedule for Artemis 1? Has work already begun on these estimates to support new leadership assessments?
4. NASA's fiscal year 2020 budget amendment requested \$651 million to preserve the flight schedules for the Space Launch System and Orion programs. However, as of February 2019, neither SLS nor Orion will meet the June 2020 date for Artemis 1, and risks may also exist to Orion's internal target date of September 2022 for Artemis 2.
  - a. Please confirm for which missions and which schedules this funding is intended, as well as what impact the funding will have in terms of reducing schedule delay.
  - b. Please also provide a breakdown of the funding needed by program and element within each program in order to achieve these impacts, as well as an explanation for why the additional funding is needed to maintain the current schedule.

Please provide your response in writing by October 11, 2019. Additionally, I reiterate my request that your staff provide my Budget Committee staff with quarterly briefings on the statuses of GAO's open recommendations.

Thank you for your prompt and continued attention to this important matter. If you have any questions about this request, please have your staff contact Doug Sahlmel on the Budget Committee staff at 202-224-0642.

Sincerely,



Michael B. Enzi  
Chairman  
Committee on the Budget