NASA's 2026 Human Lander Challenge (HuLC) Phase 2 Deliverables

This document contains specific information for deliverables for Finalist Teams competing in Phase 2 of NASA's 2026 Human Lander Challenge (HuLC).

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CHANGE LOG:

- *Any changes made to this document after first publication will be recorded here.*

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Phase 2 Deliverables for Finalist Teams

Teams selected to receive a prize and advance to Phase 2 are responsible for the following project deliverables, all of which must be releasable to the public:

- 10-15-page technical paper
- Technical poster (for Poster Session conducted during HuLC Forum)
    - Teams must submit a digital poster file **in addition to** bringing a full-size printed poster for display during the Forum's poster session. (48"x36")
- 25-minutes presentation, with an additional 20-minutes of Q&A at the HuLC Forum.

Technical papers, presentations, and posters will be posted and archived on the HuLC Website, and technical papers may subsequently be submitted through NASA's Technical Report Server (NTRS) by NASA or NIA. All work published to the HuLC website may be referenced by others, including future HuLC participants.

By submitting to the HuLC Competition, all members of your team agree to the terms and conditions contained in the HuLC Participation Agreement, as signed and submitted with their proposal submission.

Phase 2 Dates and Deadlines

All deadlines must be met by 11:59 p.m. (midnight) ET on the date specified below, unless otherwise indicated.

Date	Description
May 20, 2026	Deadline to Register and Pay for the HuLC Competition Forum
May 27, 2026	Deadline to Submit a Technical Paper
May 29, 2026	Deadline to Make a Hotel Reservation at the HuLC Group Rate
June 18, 2026	Deadline to Submit Presentation Chart Deck and Digital Poster Files
June 22, 2026	Team Check-In and Networking Event at the 2026 Human Lander Challenge Forum
June 23-25, 2026	NASA's 2026 Human Lander Challenge Forum in Huntsville, AL

Technical Paper Guidelines

Technical Paper Submission Deadline: 11:59 PM Eastern on May 27, 2026

Technical Paper Content

The technical paper should be treated as a stand-alone document, clear to someone who has never read the initial proposal paper. While a certain amount of overlap is to be expected, the final paper should be reflective of the team's entirety of findings in the competition period. It should expound upon initial findings in the proposal and take into consideration the listed technical paper components, evaluation criteria, and judges' feedback. **The technical paper should be a minimum of 10 pages and a maximum of 15 pages. Teams should pay careful attention to composition, grammar, and cohesion.**

Finalist teams will develop a 10–15-page technical paper that includes the following sections, at a minimum:

1. **Cover Page** (excluded from page limitation), with the following information:
    - University Name
    - Project Title
    - Faculty/Industry advisor's full name(s)
    - Full Names of all team members with major course of study/discipline and year in school (i.e., freshman, sophomore, junior, senior, master's PhD)
    - A graphical depiction of your concept

2. **Quad Chart** (excluded from page limitation)
    - The HuLC Quad Chart Template found on the "Technical Paper" section of the Resources webpage.
3. **Table of Contents** (not included in the page limitation)
4. **Body of Report** (10-15 pages)
    - Summary Statement/Executive Summary (Max of 150 words): An updated overall summary of the innovative solution, including the project title, a synopsis of the specific subtopic challenge being addressed, an overview of the proposed solution, and a statement of the impact the innovative solution will have on human exploration goals.
    - Project Description
        i. Describe in more detail the specific subtopic challenge, the solution to the challenge, and the objectives it is trying to achieve.
        ii. Adherence to design constraints and guidelines, including but not limited to:
            1. Minimal barriers to NASA adoption (e.g., low mass, small size, low power, cost effective, etc.)
            2. No additional risks posed to crew
            3. Ability to survive launch loads
            4. Must have a mission operational life of 30-days for lunar surface missions, or 1200-days for Mars missions
            5. Targeted use within 5 to 8 years
        iii. Note any changes made since the proposal; provide detailed information about the work conducted in various trades, concepts, and mission constructs.
        iv. Innovative approaches/capabilities/technologies
        v. Supporting original engineering analysis and justification of assumptions
    - Verification and validation of the solution
        i. Detail the solution verification and/or testing approach, including what tools or equipment was used to attempt to prove your analysis was correct.
        ii. Detail any obstacles or issues with development, and how they were mitigated.
    - Realistic technology assumptions, including realistic NASA Technology Readiness Level Definitions and justifications where appropriate
    - Mass and size estimates (as appropriate)
    - Proposed path-to-flight project timeline for Development, Test, and Evaluation (DT&E) of proposed solution – assuming a mission in the next 5-8 years
        i. Detail any scaling of the technology and test results that will be required and the methodologies that are planned to scale the results for full scale applications.
    - A realistic budget assessment (including an assessment of cost margin and annual operating costs) and **an explanation of the assumptions**. Use of analogs and NASA costing tools is strongly encouraged.
        i. Note: A realistic assessment of costs includes technology maturation, system development, mission infusion/adoption, integration, and operations (as appropriate).
    - Full concept/mission architecture timeline
    - Conclusions and key findings supporting the envisioned approach
        i. Defend your design/approach/concept in terms of VALUE in the areas of potential mission / system impacts, technology readiness, affordability, programmatic implementation, and risk.
5. **Appendices,** if needed (excluded from page limitation)

Technical Paper Formatting Instructions

Each team is responsible for the formatting and appearance of their technical paper.

- **Length:** Technical papers must be between 10-15 pages, inclusive of all text, graphics, tables, and charts.
  - Cover Page, Quad Chart, Table of Contents (if used), & Appendices are excluded from the page count.
  - References should be placed in an appendix at the end of the document. ***Appendices are to be used for references and calculations ONLY and do not count toward the page limit.***
    - Note: *Judges are not required to review content beyond the maximum page limit, including appendices. Ensure all critical details are included within the proposal body.*
    - References must be formatted consistently and correctly. Simply listing a link is not acceptable.
- **Layout:**
  - Single-spaced, single column format
  - Standard 1" (2.54 cm) margins on all sides
- **Graphics, Tables, and Charts:**
  - Strongly encouraged where appropriate - effective visuals can convey complex ideas more clearly than text alone.
  - Figures and tables must be legible without magnification, embedded in the document, and in digital format.
  - Image files should have a minimum resolution of 150 dpi.
- **Fonts:**
  - Use fonts common to Macintosh and PC platforms (i.e., Times, Times New Roman, Helvetica, Aptos, Calibri, or Arial for text; Symbol for mathematical symbols and Greek letters).
  - Font size must be 11 or 12 pt. throughout, including all tables, charts, and graphics. *Text smaller than this will not be reviewed.*
- **File Type:** Technical papers must be submitted as PDF files.

Submitting The Technical Paper

To upload your technical paper (.pdf), please visit the Technical Paper Submission Form webpage. Utilize the Technical Paper Submission Checklist to ensure your submission is complete prior to submitting.

No revisions will be accepted after submission. Proof your technical paper carefully. In the event of technical issues (e.g., corrupted file, broken link, etc.), we will attempt to contact you – so ensure your submission form includes current contact information. **Late submissions will not be accepted**; the form will close promptly at midnight.

The following information will be required on the Technical Paper Submission Form:

- College/university name
- Project Title
- An updated synopsis of concept (2-3 sentences; max. 600 characters)
- Primary Faculty Advisor and Student Team Lead contact information
- PDF file upload for technical paper
- Two high-definition images illustrating your concept, for public promotion in online media outlets (min. 300 dpi)
- **IMPORTANT:** PDF file upload for the Faculty Advisor Approval Attestation using the provided template
  - **Note: Submissions without a valid Faculty Advisor Approval Attestation will be deemed non-compliant and will not be reviewed.**

Presentation Guidelines

Presentation Chart Deck and Digital Poster Submission Deadline: 12:00 PM (Noon) Eastern on June 18, 2026

Format and Timing

- Presentations are limited to 25 minutes, followed by a 20-minute Q&A session with the judges.
- A Cover Slide is required and must include the project title, university name, and faculty advisors' names.
- Presentations must align with the content of the technical paper. **Introducing significant new ideas or concepts not included in the paper may result in scoring penalties.**
- If any errors were discovered after submitting the paper, this is the appropriate time to acknowledge and address them.

Delivery

- Presentations will be supported by a PowerPoint slideshow.
- Teams may decide who delivers the presentation; however, all team members are encouraged to stand together at the front of the room, so they are available for questions.
- **Teams should be prepared to answer questions with a strong understanding of the technologies and capabilities introduced in their final paper.**

Slide Readability

- The presentation room will be large; slides must be easy to read from the back of the room.
- Use large fonts, high-contrast color schemes, and avoid black backgrounds.
- Ensure figures and calculations are clearly legible.
- Avoid dark videos or animations, which do not display well in the room setting.
- Downloaded or custom fonts **must be embedded** within the chart deck.

Chart Deck Formatting Guidelines

- **Format:** PowerPoint (.pptx or .ppt)
- **Size:** ≤100 MB size limit
    - If file size is an issue, teams may **also** provide a download link to a larger version of their presentation, with the following restrictions:
        - Linked presentation files must be 250 MB or smaller. Files over 250 MB will not be accepted; instead, the 100 MB upload will be used.
        - Linked presentation files will be downloaded for offline use. Presentation cannot be played from a browser (i.e., we cannot use Google Slides).
        - A 100 MB or smaller version is still required for archival on the HuLC website, regardless of whether a larger linked file is submitted.
- **Orientation:** Landscape (horizontal)
- **Restrictions:** All videos and images must be embedded

Technical Poster Guidelines

Each finalist team must submit a full-sized digital poster of their technical poster with their presentation chart deck submission. Teams must also bring a 48"x36" printed copy for display during the poster session at the HuLC Forum. The poster session provides teams with an opportunity to expound upon important concepts in their presentations and allows judges to ask questions for further clarification.

Digital Technical Poster Guidelines

The digital technical poster file must be submitted with the presentation chart deck; files will be displayed on the HuLC Website prior to the start of the Forum. Digital files should adhere to the following formatting guidelines:

- **Dimensions:** 9600 pixels x 7200 pixels (48" x 36")
- **Orientation:** Landscape (horizontal)
- **Image Quality:** Print-ready, minimum 300 dpi (when possible)
- **Clarity:** All images/graphs must be legible and appropriately sized
- **Format:** PDF, ≤100 MB size limit
- **Identifier:** Small team identifier (university/team name and/or logo)
- **Restrictions:** No embedded links (except references); no NASA "meatball" or "worm" logos

Printed Poster Guidelines

- **Teams are responsible for printing and bringing their own posters to the Forum, and posters should be exactly 48"x36" (landscape).**
- During the HuLC Forum Poster Session, each team will have a 6' table to display their poster.
    - A 48" x 36" tri-fold foam/cardboard posterboard will be provided to each team to use at no cost, along with thumbtacks and double-sided tape to secure posters to the tri-fold boards.

Submitting the Presentation Chart Deck and Digital Poster Files

To upload your team's presentation and digital poster files, please visit the Challenge Details webpage.

- Revisions will not be accepted after the 12:00 PM (noon) Eastern deadline – no exceptions.
- Late submissions will not be accepted; the submission form will close promptly at 12:00 PM (noon) ET. Teams that fail to submit a presentation on time will be barred from presenting.

The following information will be required on the Presentation and Digital Poster Submission Form:

- College or university name
- Project title
- Primary Faculty Advisor and Student Team Lead information
- Upload for digital poster files(.pdf)
- Upload for presentation chart deck files (.pptx or .ppt file)

Phase 2: Final Evaluation Criteria

The judging panel, comprised of NASA and industry experts will evaluate and score these final components independently of the Phase 1 Proposal Package review process. Proposal scores are used only to select finalists and do not impact final competition results in Phase 2.

The 2026 HuLC Phase 2 Scoring Matrix outlines how the technical paper, technical poster, and presentation will be evaluated. Final deliverables will be judged against the criteria below, with a maximum possible score of 100 points.

Phase 2 Scoring Matrix (100 points max)

Technical Paper Evaluation Criteria (70 Points Max)

- **Technical Credibility and Feasibility** (Max 40 points)
  - Is the proposed solution appropriate for application and operation in cislunar, lunar, and/or Martian environments?
  - Is the proposed solution described with sufficient technical detail to demonstrate that it can be implemented as intended?
  - How feasible is the proposed solution in addressing the needs of ECLSS in terms of technical maturity, adherence to the HuLC constraints, and potential to directly contribute to resolving HLS challenges?
  - Has the team identified the technical challenges and risks associated with development, verification, and validation, and defined credible mitigation strategies?
  - Has the team provided adequate technical justification and evidence supporting the selected design, configuration, system architecture, or approach with respect to technology readiness, system performance, affordability, programmatic implementation, and risk?
  - Has the team included a realistic assessment of project cost and schedule, including technology maturation, system development, production, and operations?
- **Innovation** (Max 20 points)
  - Have new or novel concepts, materials, capabilities, technologies, approaches and/or applications been demonstrated through the team's research, engineering analysis, or capability demonstrations to support the Human Landing System (HLS)?
  - Is the technology approach differentiated from existing work in the open literature in its application to the Human Landing System?
- **Technical Management** (Max 10 points)
  - Is the development and implementation plan adequate and thorough, with a path-to-adoption schedule and milestones clearly defined and reasonable?
  - Did the team adhere to HuLC requirements and constraints, and where applicable, provide clear technical justification for exceeding any established limits?
  - Is the proposed solution clearly written, well organized, and effectively communicated?
  - Has the team presented technically supported conclusions regarding their design solution or approach?

Presentation Evaluation Criteria (15 Points Max)

- **Presentation Quality** – Including clarity and structure of the presentation slides, presentation delivery, and representative of the findings and work written in the technical paper (Max 5 points)
- **Q&A Response** – Quality of response to questions from the judges (Max 5 points)
- **Presentation Delivery** – Effectiveness of communication and delivery, and presence of integration and teamwork (Max 5 points)

Poster Session Evaluation Criteria (15 Points Max)

- **Aesthetics** – Visually compelling and appealing; creative use of color, graphics, images, and/or photos (Max 5 points)
- **Organization and Flow** – Components clearly present findings and work written in the technical paper (Max 5 points)
- **Engagement** - Team actively engaged judges, provided clear explanation of their work, and answered questions appropriately (Max 5 points)

Bonus Points (Max 10 points)

- Does the solution help NASA understand, manage, or implement ECLSS systems? *OR,*
- At the time of the forum, has the solution demonstrated enough merit that NASA can consider exploring the concept further or consider investing in making the concept flight-ready? *OR,*
- Does the solution address risks in a manner that can directly contribute to resolving HLS challenges?

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Phase 2: Prize

Overall Competition Winners

Teams selected to receive a prize and move on to Phase 2 are responsible for the development of a technical paper, technical poster, and an in-presentation during the HuLC Forum in June 2026 at or near NASA's Marshall Space Flight Center in Huntsville, Alabama. During the culminating Awards Ceremony at the HuLC Forum, awards will include 1st, 2nd, and 3rd place, and any other panel-determined honors (e.g., Best Technical Poster, Best in Systems Engineering, etc.). The top three placing teams will be awarded the following prize amounts, with funds distributed to the university:

- First Place - $10,000
- Second Place - $5,000
- Third Place - $3,000

Contact Information

NASA's Human Lander Challenge (HuLC) is administered by the National Institute of Aerospace on behalf of the National Aeronautics and Space Administration (NASA). HuLC is sponsored by the Exploration Systems Development Mission Directorate's (ESDMD's) Human Landing System (HLS) Program Office. **For HuLC inquiries, please contact the NIA HuLC Program Team at HuLC@nianet.org**.

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