NASA Scientific Balloon Program Supplemental Draft Programmatic Environmental Assessment

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Image of 2024 Ft. Sumner, NM Salter Campaign

Contents

Background

- Village of Fort Sumner, New Mexico and Palestine, Texas
  - –NASA launches and monitors the flights of scientific balloons at Fort Sumner Municipal Airport in the Village of Fort Sumner and at Columbia Scientific Balloon Facility at Palestine.
  - –A maximum of 31 scientific balloons are launched each year from these sites.
  - –The number of annual launches from Fort Sumner and Palestine would remain the same at 25 and 6, respectively.
  - –New construction would take place at both launch sites.
- New Balloon Launch Site in Burns, Oregon
  - –The Balloon Program Office (BPO) proposes to increase the annual number of launches per year by adding 10 launches from a new launch site in Burns.
  - –New construction would take place at the Burns launch site.
  - –Flights would be tracked from a new tracking station in Idaho Falls, Idaho.

Purpose and Need

- Purpose:
  - Primary purpose of the NASA Scientific Balloon Program is to support NASA's Science Mission Directorate for research initiatives conducted in a near-space environment.

    –The program offers scientists and engineers a low-cost opportunity to explore experimental concepts and develop the hardware to gather and measure near-space data for analysis.

- Need:
  - The Scientific Balloon Program has seen a dramatic increase in demand from scientific researchers and students to test more sophisticated equipment and experiments.
  - Applications selected are chosen based on scientific and technical merit; but many are not selected due to the high demands at the existing launch sites.
  - NASA BPO proposes to increase the number of launches each year by 10 to a total of 41 launches by adding the Burns launch site to meet new science mission demand.

Alternatives Considered

Proposed Action

- Fort Sumner, New Mexico
  - Demolish 1 building, construct 4 buildings, renovate 1 building.
- Palestine, Texas
  - Demolish 17 buildings, construct 12 buildings, renovate 3 buildings.
- Burns, Oregon
  - Construct 2 buildings, parking areas around each building, and 1 scientific balloon launch pad.
  - Flights would be monitored from the command station at Burns Municipal Airport.
- Idaho Falls, Idaho
  - Lease land from Northeast General Aviation Area of Idaho Falls Regional Airport.
  - Construct 50 x 50 ft concrete pad for a mobile telemetry station powered by mobile generator.
  - Mobile telemetry ground tracking station would track flights from the Burns launch site.

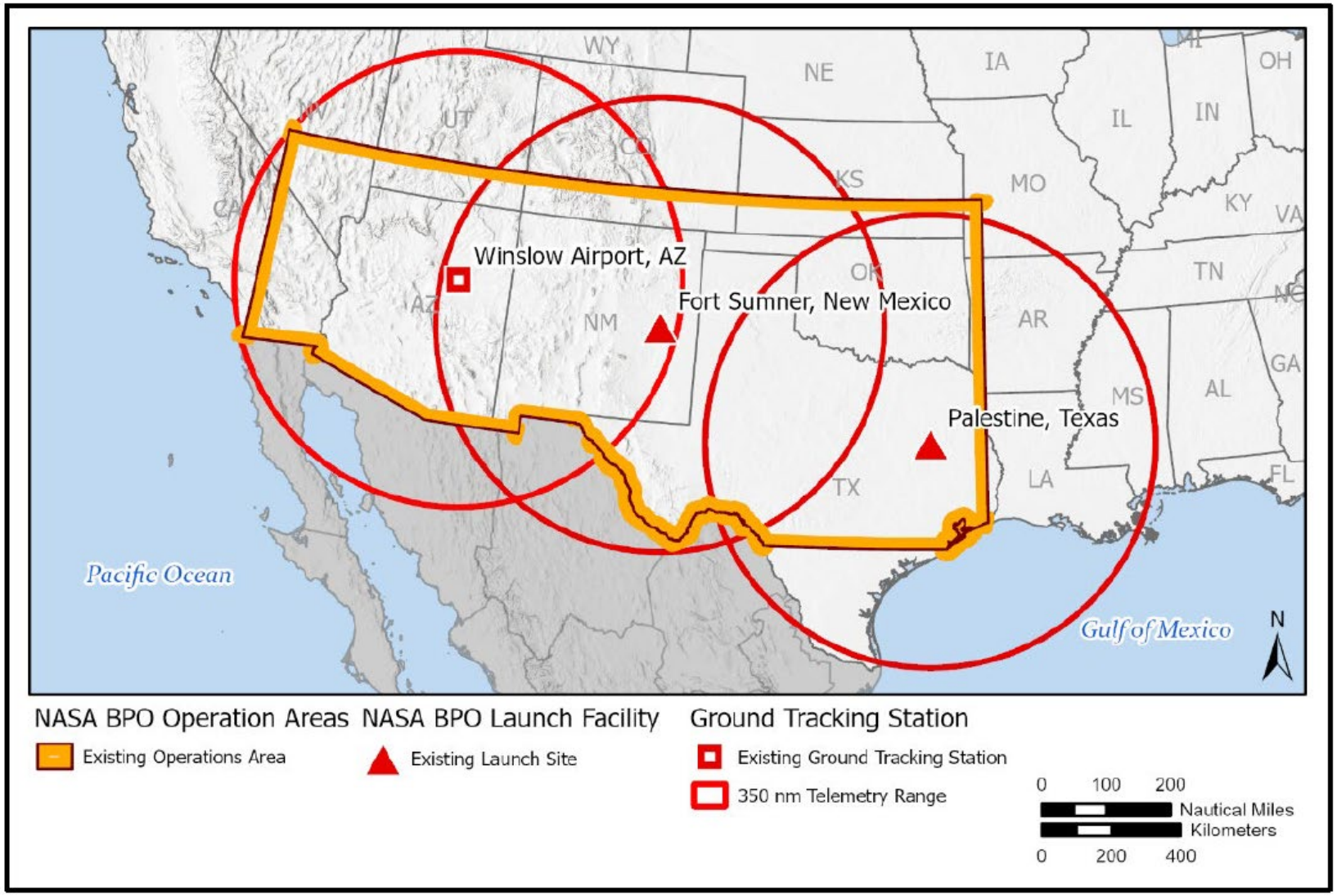
No Action Alternative

- Combined 31 launches per year from Fort Sumner and Palestine.
- No infrastructure changes at Fort Sumner or Palestine.

Ft. Sumner and Palestine Operations Area

Goddard Space Flight Center

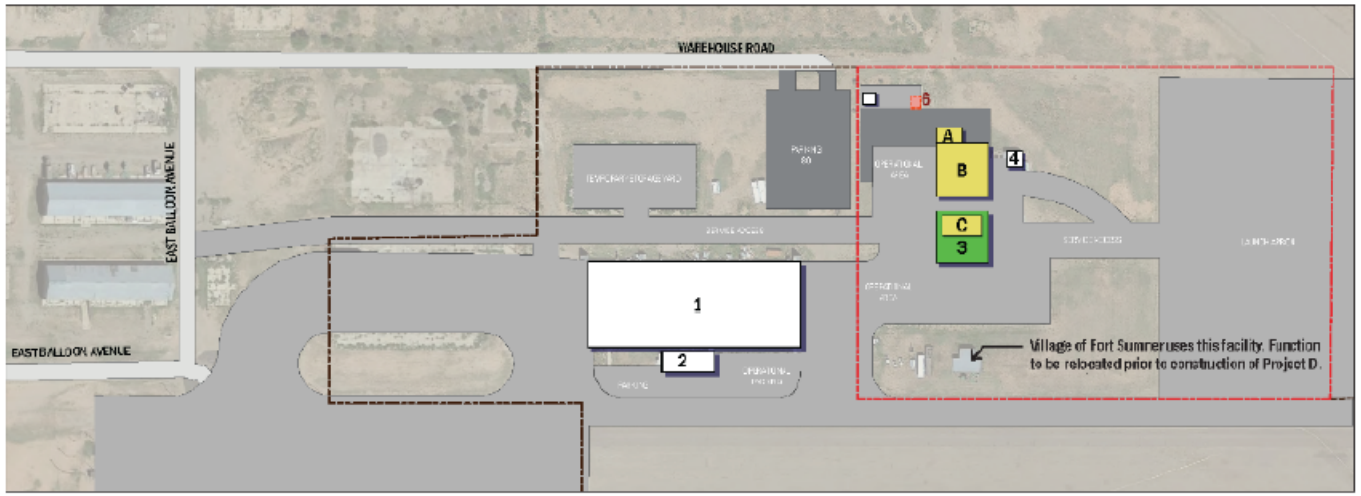
Wallops Flight Facility



Proposed Fort Sumner Site Improvements

Goddard Space Flight Center

Wallops Flight Facility



PREFERRED DEVELOPMENT PLAN - NEAR-TERM PHASE

NEW BUILDINGS

A. Kitchen (800 SF)
B. Staging Building (8,000 SF)
C. Roof Ops Equipment Space (1,800 SF)

RENOVATIONS

Building 3 (8,800 SF)

DEMOLITIONS

Building 6 (300 SF)

LEGEND

- EXISTING BUILDINGS
- NEW BUILDINGS
- BUILDING DEMOLITIONS
- BUILDING RENOVATIONS
- EXISTING ROADS/PARKING (GENERAL USE)
- EXISTING ROADS/PARKING (OPERATIONAL/SERVICE USE)
- NEW ROADS/PARKING
- WOODED AREAS
- CAMPUS OWNED PROPERTY BOUNDARY
- CAMPUS LEASED PROPERTY BOUNDARY

PREFERRED DEVELOPMENT PLAN - MID-TERM PHASE

NEW BUILDINGS

D. Mission Support (900 SF), Balloon Storage (4,200 SF), Electronics and Conference Room (3,500 SF)

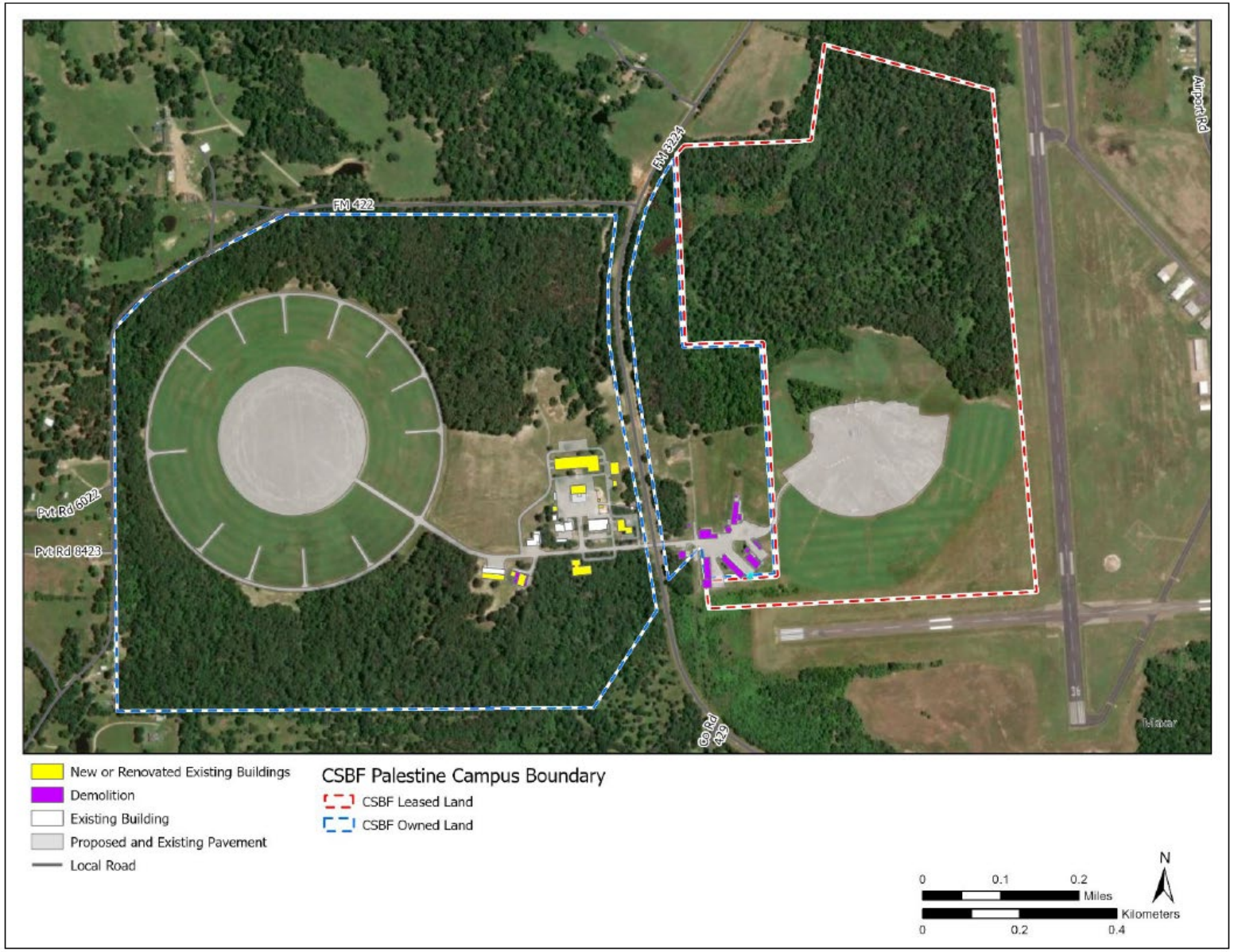
LEGEND

- EXISTING BUILDINGS
- NEW BUILDINGS
- EXISTING ROADS/PARKING (GENERAL USE)
- EXISTING ROADS/PARKING (OPERATIONAL/SERVICE USE)
- WOODED AREAS
- CAMPUS OWNED PROPERTY BOUNDARY
- CAMPUS LEASED PROPERTY BOUNDARY

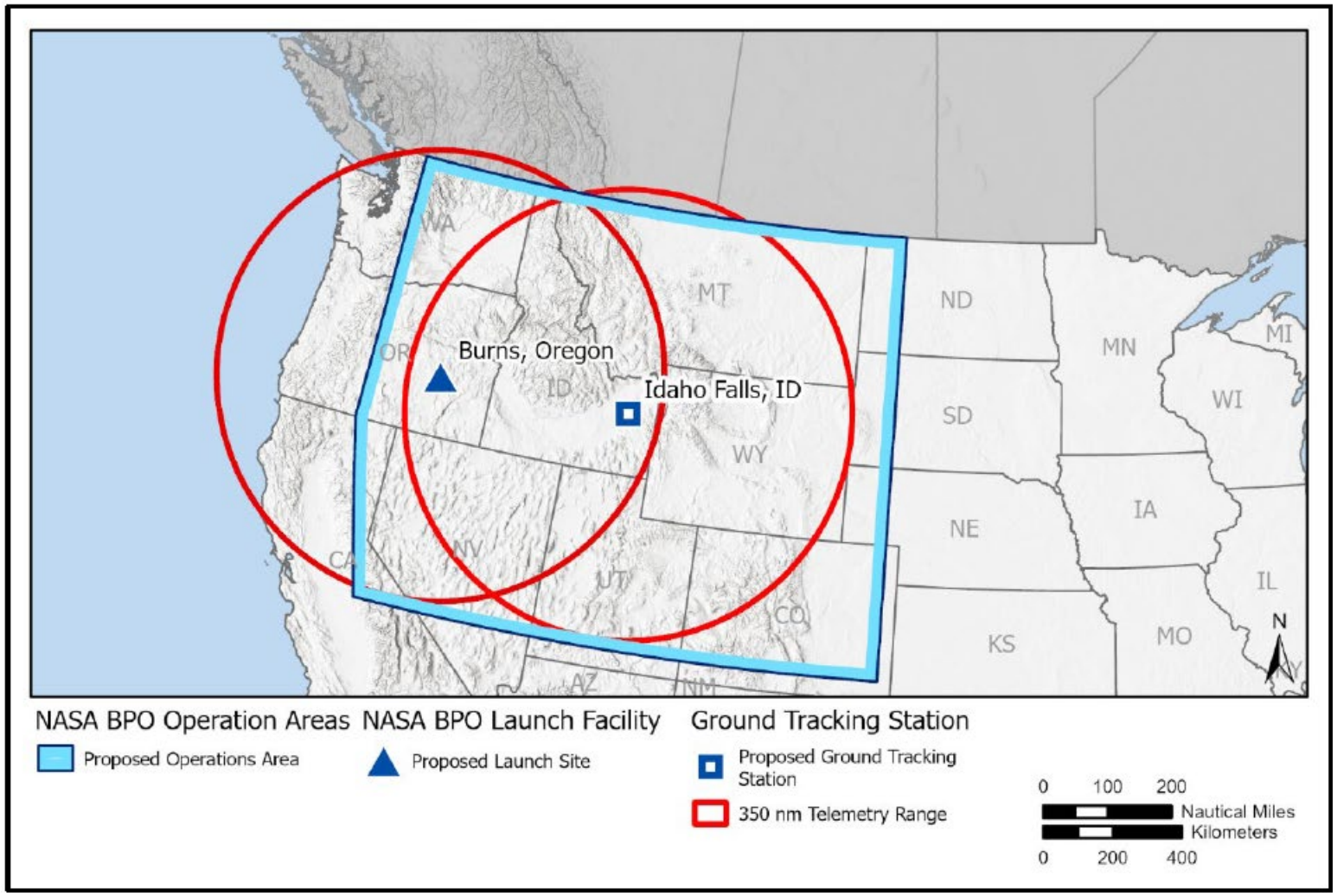
Proposed Palestine Site Improvements

Goddard Space Flight Center

Wallops Flight Facility



Proposed Burns Operations Area



Proposed Construction at the Burns Municipal Airport

Proposed Construction at Idaho Falls Regional Airport

Goddard Space Flight Center

Wallops Flight Facility

Resources Analyzed

Resource Area	Action Alternative	No Action Alternative
Airspace and Scientific Balloon Operations	No significant adverse effects to airspace management or balloon operations are anticipated to result from this proposal. Operations from CSBF Fort Sumner and CSBF Palestine would continue to adhere to the letter of agreement with the Albuquerque ARTCC and Fort Worth ARTCC (CSBF 2021b), and Cannon Air Force Base would continue to be notified prior to balloon launches to further enhance safety in the region. Coordination with Seattle ARTCC, and other FAA ARTCCs as needed to ensure safety, would occur for launches from the proposed Burns, launch site. As such, effects to other users of the airspace from balloons launched from the existing and proposed sites would not be adverse.	There would be no change to airspace and balloon operations as existing conditions would remain unchanged from that analyzed in 2010 (NASA 2010).
Land Use	No significant adverse effects to land use are anticipated. SULMAs would continue to be avoided under the Proposed Action. The existing operations area spans portions of 12 states; the proposed operations area would span portions of 12 states. The chances of a balloon/payload landing within the same vicinity more than once would be very unlikely. Recovery operations are often complete within 24 hours after landing. Should a balloon/payload land within a SULMA, or on private land, the land manager/landowner would be contacted prior to the recovery team accessing the site. If required, a permit or authorization would be obtained to retrieve the balloon/payload.	The same emphasis on avoiding sensitive lands would continue as previously analyzed (NASA 2010).

Resources Analyzed

Resource Area	Action Alternative	No Action Alternative
Air Quality	There would be no significant effects to air quality resulting from the proposed action. Emissions from construction activities at each of the launch sites and operations emissions at each of the launch sites would not perceptibly affect the air quality within each county/district or affect attainment status. The counties where CSBF Fort Sumner and CSBF Palestine, the proposed Burns launch site, and the proposed Idaho Falls tracking site are in attainment for all criteria pollutants, except for a small portion of Anderson County where CSBF Palestine is located. This area near the former Big Brown Power Plant is designated as a nonattainment area for the 2010 sulfur dioxide (SO_2) National Ambient Air Quality Standards (NAAQS). Air emissions from balloon operations, motor vehicle operations, and tracking airplanes, would not be perceptibly changed within the existing and proposed operations areas. Overall, no perceptible change in air emissions would be anticipated from implementation of the Proposed Action.	Air emissions would remain virtually unchanged from that analyzed in 2010 (NASA 2010).
Biological Resources	No significant adverse effects to biological resources are anticipated; operations would continue to avoid known critical habitats and wetlands. If unplanned circumstances resulted in the need to land a payload within a designated critical habitat, NASA BPO personnel would initiate contact with U.S. Fish and Wildlife to determine the best method for payload recovery, with the least environmental effect.	There would be no change to biological resources beyond existing conditions. There would be no increase in activity under the No Action Alternative; therefore, no increased effects from payload landing and/or recovery operations beyond that previously analyzed (NASA 2010).

Resources Analyzed

Resource Area	Action Alternative	No Action Alternative
Cultural Resources	There is a potential for adverse effects to cultural resources from balloon/payload landing and recovery activities; however, the probability for affecting culturally significant resources is extremely low. Predictive modeling used for balloon/payload landing would continue to be used for avoidance of all known culturally significant areas. If a balloon or payload landing were to occur on culturally sensitive lands, NASA BPO personnel would contact the appropriate State or Tribal Historic Preservation Officer prior to recovery activities.	Balloon operations would continue as they have for the past 35 years, and as previously analyzed (NASA 2010), with continued avoidance techniques to limit potential effects to culturally sensitive areas.
Socioeconomics	There would be no significant adverse effects to socioeconomics. The proposed Burns launch site would experience a short-term positive economic effect each year during balloon campaigns from the purchase of food, supplies, and lodging by personnel, research scientists, and students. Proposed construction, demolition, and renovation would occur over a number of years and is relatively small scale and, therefore, not anticipated to contribute measurably to socioeconomic effects.	The socioeconomic conditions at CSBF Fort Sumner and CSBF Palestine would remain virtually unchanged from that analyzed in 2010 (NASA 2010).

Resources Analyzed

Resource Area	Action Alternative	No Action Alternative
Safety	There would be no significant safety effects. NASA BPO has extensive safety procedures for launch and recovery activities that ensure safety of staff and the general public. Models developed by NASA are used to predict the landing location of the balloon system. Along with real-time computer monitoring and controls, population centers and SULMAs can be avoided, virtually eliminating the potential for injury to people or property.	Safety protocols and procedures currently in place would continue to be observed (NASA 2010).
Hazardous Materials and Systems	Adequate measures are in place and would continue to be implemented in the event hazardous materials were used during balloon staging and operations. Should a release of any hazardous materials occur during payload landing/recovery operations, staff would implement NASA-approved procedures for cleanup in accordance with applicable U.S. federal and state regulations.	No change from that analyzed in 2010 (NASA 2010).

Archeological and Cultural Sensitivity Modeling

- Archeological Predictive Model (APM) used to determine likelihood of finding cultural/archaeological resources.
  - Evaluated behavioral factors to evaluate where people potentially lived, hunted, fished, or carried out other activities.
  - Researched preservation factors to evaluate areas that have been destroyed, severely damaged, or have potential for preservation.
  - LiDAR data was used to calculate slope and evaluate potential integrity of known sites including visible features not shown on aerials and topographic maps.

Figure 8: Fort Sumner Archaeological Predictive Model

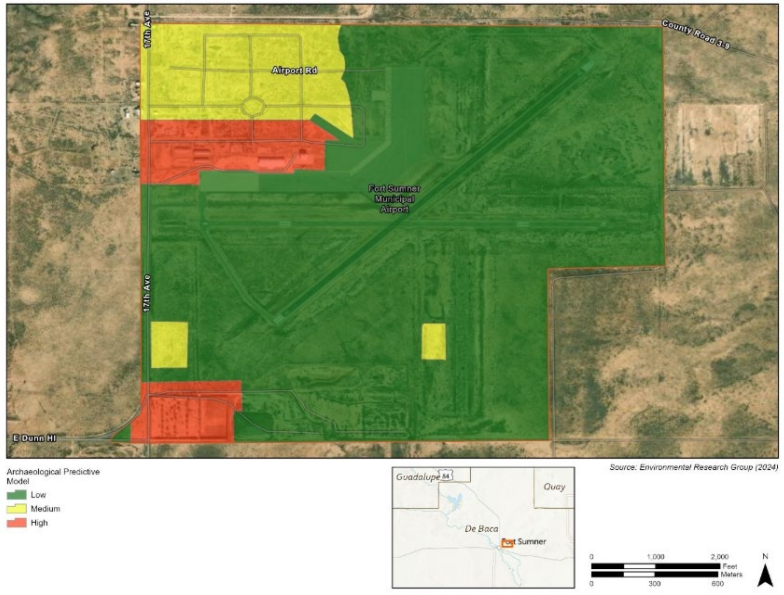


Figure 9: Palestine Archaeological Predictive Model

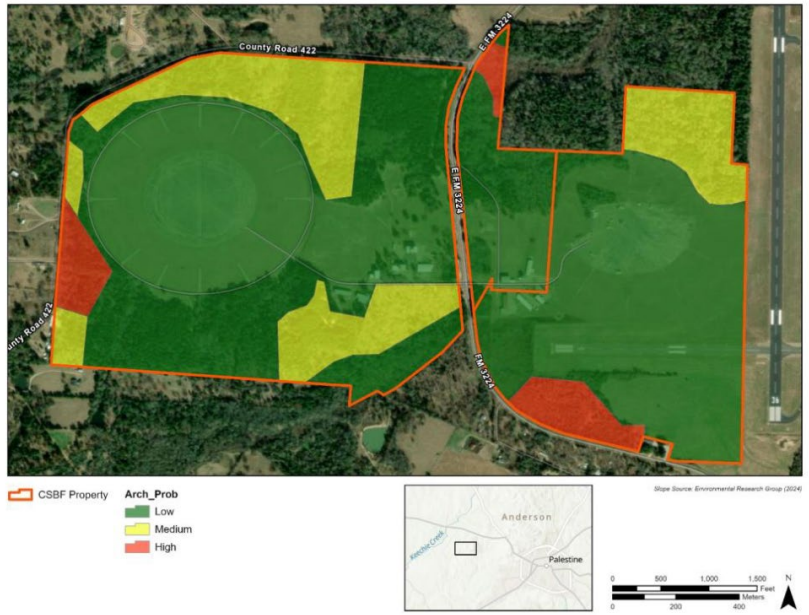


Figure 10: Burns Archaeological Predictive Model

Archeological and Cultural Sensitivity Modeling

- All sites have a combination of low, medium and high probability areas developed from the cognitive approach of model development. The archeological modeling will be used as a planning tool for avoidance and mitigation when planning future ground disturbing activities and consultations at the specific locations.
- Palestine, TX
  - Texas SHPO concurred with the sensitivity model supplied. High Probability Areas in the survey will require further archeological survey prior to future ground disturbing activities. No tribal concerns.
- Fort Sumner, NM
  - New Mexico SHPO requires more local survey data prior to any future ground disturbing activities. No tribal concerns.
- Burns, OR
  - Oregon SHPO did not respond within 30 days. No tribal concerns.

Historic Resource Eligibility Study (HRES)

- The Contractor performed an HRES and Determination of Eligibility (DOE) of appropriate structures at the Palestine, TX, site for state and national historical significance.
- Surveyed structures were evaluated individually and as part of an historic district for their historical significance and integrity according to the National Register of Historic Places (NRHP).
- One building is proposed as individually eligible for listing and as a collection 13 structures (11 buildings and 2 launch pads) form a proposed historic district. HRES concurrence from TX SHPO tracking for June 2025 alongside NASA Nationwide Programmatic Agreement work.

Public Participation

Publication of the Notice of Availability starts a 30-day public comment period. Interested parties are invited to submit comments on environmental issues and the substance of the Draft Supplemental PEA by June 16, 2025. Comments may be submitted by e-mail or mail.

Comments submitted via e-mail should be addressed to: gsfc-dl-nepa@nasa.gov.

Comments submitted via first class, registered, or certified mail should be addressed to:

Center NEPA Manager, Mail Stop 250

NASA Goddard Space Flight Center

Wallops Flight Facility

34200 Fulton Street

Wallops Island, VA 23337

The Draft Supplemental PEA may be viewed at the following locations:

- Harney County Library, Burns OR (541-573-6670)
- Fort Sumner Public Library, Fort Sumner NM (575-355-2832)
- Palestine Public Library, Palestine TX (903-729-4121)

Limited hard copies of the Draft Supplemental PEA are available, on a first request basis, by contacting the e-mail address above. The Draft Supplemental PEA will be available for public review online at the following address: https://www.nasa.gov/goddard/memd/nepa/NASA-Balloon-SPEA.