

From: Stacey.Zee@faa.gov
To: [Theresa de la Garza](#)
Cc: [Bill Martin](#); [Winton, Bryan](#); Caryn.Schenewerk@spacex.com; [Eckhardt, Cheryl](#); [christine whitacre@nps.gov](mailto:christine_whitacre@nps.gov); cvaughn@achp.gov; Daniel.Czelusniak@faa.gov; Daniel.Murray@faa.gov; [Gardiner, Dawn](#); Jaclyn.Johnson@cardnotec.com; Katherine.Andrus@faa.gov; Kendal.Keyes@tpwd.texas.gov; Lori.Thursby@cardnotec.com; [Spier, Mark E](#); michael.strutt@tpwd.texas.gov; michelle.murray@faa.gov; NBaker@icfi.com; ngabriel@achp.gov; NSullivan@icfi.com; [Stanley, Randy GRS](#); [Jess, Robert RJ](#); [Garza, Rolando L](#); Ross.Melinchuk@tpwd.state.tx.us; Steve.Davis@spacex.com; theresa_ely@nps.gov; [Keohan, Tom](#)
Subject: RE: SpaceX Texas Launch Site Programmatic Agreement for final review and signature
Date: Tuesday, March 25, 2014 10:50:30 AM
Attachments: [20140324 spacex shpo ltr.pdf](#)
[Falcon Heavy dB Lighthouse SpaceX.pdf](#)

Terry,

This email addresses 3 topics:

- (1) the FAA's response to THC's January 9, 2014 letter regarding Additional Assessment of Effects on the NHL;
- (2) the FAA's response to the TPWD's concern about vibrational impacts on the Point Isabel Lighthouse; and
- (3) agency comments regarding the definition of the Undertaking.

1. The FAA's response (letter) is attached to this email. A hardcopy of the letter will go out in the mail today. Please let me know if you would like to set up a time to discuss any remaining concerns.

2. The FAA and SpaceX examined the potential for a Falcon 9 and Falcon Heavy launch to cause vibrations that would affect the Point Isabel Lighthouse.

The EIS addresses structural damage claims from rocket launches. "Studies based on ground testing of rocket systems indicate an expectation of 1 damage claim in 1,000 households exposed to an average continuous noise level of 111 dB, and 1 in 100 households at 119 dB. Accordingly, the unweighted noise levels of 111 dB and 119 dB are used as a general guideline for assessing potential risk for structural damage claims."

The lighthouse (approximately 6.5 miles away from the proposed launch site) would be exposed to levels of 118 dB (7.0 miles) to 119 dB (6.0 miles) for a Falcon Heavy launch (see attached figure).

The EIS further states potential for structural vibration damage at South Padre Island. "The unweighted Lmax levels indicate the probability of a noise induced structural vibration damage claim at South Padre Island would be less than 1 in a 100 for a Falcon 9 launch and greater than 1 in a 100 for a Falcon Heavy launch. Sound levels indicate the maximum A-weighted OASPL levels on the island would be less than 115 dBA hearing conservation guidelines. South Padre Island lies outside the DNL 65 dBA contours."

In summary, the chances of vibrational effects from a Falcon 9 or Falcon Heavy launch on the lighthouse are extremely unlikely.

3. In their comments on the draft PA, NPS and USFWS expressed concern regarding the definition of

the Undertaking, stating that the FAA is excluding parts of the project from the definition of the Undertaking—namely, (1) water lines, (2) sewer lines, (3) improvements/widening of SH 4, (4) the STARGATE project, and (5) the utility upgrade stemming from Brownsville to the control center. It appears the confusion stems from previous statements in the PA that stated what the project does not include.

NPS has stated that an official letter will be sent on this matter (the FAA has not received an official letter to date) - to which the FAA will provide an official response. However, we have provided some clarification below:

Water Lines: Other than water distribution lines between the control center and launch area (and within the boundaries of the control center and launch area), there are no other water lines proposed. This is explained in the EIS and accounted for in the Undertaking as part of the overall construction of both sites. Because the groundwater is likely to exceed state standards for TDS, water would be trucked in and stored in the water tower at the launch site. To disperse this water within the launch site, water distribution lines would be buried within the boundaries of the site. To disperse this water to the control center, a distribution line would be installed underground within the SH 4 ROW between the control center and launch site (same as the utility lines between the two sites). Additional lines would be installed within the boundaries of the control center.

Sewer Lines: There are no sewer lines proposed. As stated in the EIS, a sewer system would consist of a mobile above-ground processing unit and holding tank. Wastewater collection would not be conveyed to an existing municipal treatment system. Septic systems are proposed at both the vertical launch and control center areas.

SH4 Improvements: There are no SH4 modifications/improvements/etc. proposed.

STARGATE: This proposed project was analyzed in the Cumulative Impacts chapter of the Draft EIS, because it could move forward with or without the existence of the SpaceX Texas launch site. The FAA has no authority over this project. Therefore, the FAA does not consider this project as part of the Undertaking.

Utility Upgrade: The FAA has limited knowledge (via information provided by SpaceX and MVEC) of the details of the upgrade. Final design details would be provided later in the project planning. In short, based on the FAA's understanding, where the utility lines are aboveground, they would remain aboveground, and where they are below ground, they would remain below ground. The FAA has no authority over this upgrade, and thus does not consider the upgrade as part of the Undertaking under Section 106. The upgrade is included in the NEPA analysis to the extent possible at this time.

If utility poles would be installed within refuge property, the USFWS would have to issue a special use permit (a federal action). The USFWS' federal action would require compliance with all applicable federal regulations, including Section 106. The USFWS could comply with Section 106 by agreeing in writing to the terms of the PA for this project (per Stipulation VII of the PA).

Please let me know if you have any additional questions.

Stacey M. Zee
Commercial Space Transportation, AST-100
Federal Aviation Administration
800 Independence Ave, SW, Suite 325
Washington, DC 20591
(202)267-9305

From: Theresa de la Garza <Theresa.delaGarza@thc.state.tx.us>

AST-100, Space Transportation Development Div
To: Stacey Zee/AWA/FAA@FAA, "Lori.Thursby@cardnotec.com" <Lori.Thursby@cardnotec.com>, "mark_spier@nps.gov" <mark_spier@nps.gov>, "michael.strutt@tpwd.texas.gov" <michael.strutt@tpwd.texas.gov>, Michelle Murray/AWA/FAA@FAA, "NBaker@icfi.com" <NBaker@icfi.com>, "ngabriel@achp.gov" <ngabriel@achp.gov>, "NSullivan@icfi.com" <NSullivan@icfi.com>, "randy_stanley@nps.gov" <randy_stanley@nps.gov>, "robert_jess@fws.gov" <robert_jess@fws.gov>, "rolando_garza@nps.gov" <rolando_garza@nps.gov>, "Ross.Melinchuk@tpwd.state.tx.us" <Ross.Melinchuk@tpwd.state.tx.us>, "Steve.Davis@spacex.com" <Steve.Davis@spacex.com>, "theresa_ely@nps.gov" <theresa_ely@nps.gov>, "tom_keohan@nps.gov" <tom_keohan@nps.gov>, "Caryn.Schenewerk@spacex.com" <Caryn.Schenewerk@spacex.com>
Cc: Bill Martin <Bill.Martin@thc.state.tx.us>, "bryan_winton@fws.gov" <bryan_winton@fws.gov>, "Cheryl_Eckhardt@nps.gov" <Cheryl_Eckhardt@nps.gov>, "christine_whitacre@nps.gov" <christine_whitacre@nps.gov>, "cvaughn@achp.gov" <cvaughn@achp.gov>, Daniel Czelusniak/AWA/FAA@FAA, Daniel Murray/AWA/FAA@FAA, "Dawn_Whitehead@fws.gov" <Dawn_Whitehead@fws.gov>, "Jaclyn.Johnson@cardnotec.com" <Jaclyn.Johnson@cardnotec.com>, Katherine Andrus/AWA/FAA@FAA, "Kendal.Keyes@tpwd.texas.gov" <Kendal.Keyes@tpwd.texas.gov>

Date: 03/14/2014 12:19 PM

Subject: RE: SpaceX Texas Launch Site Programmatic Agreement for final review and signature

Stacey,

Our legal counsel at the AG's office has completed their review of the PA. However, we would like to hold off on issuing our response until we see how FAA/SpaceX will respond to the TPWD inquiry into vibrational effects to the Port Isabel lighthouse and the NPS request for justification/clarity regarding the definition of the Undertaking (why certain activities have been excluded). Both of these items have the potential to require additional clarification in the PA (within the Whereas clauses). We hope the turnaround of the other responses can facilitate meeting your PA review deadline.

Respectfully,

Theresa A. de la Garza

Project Reviewer – South Texas Region
Division of Architecture
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711
512-463-8952
www.thc.state.tx.us



From: Stacey.Zee@faa.gov [<mailto:Stacey.Zee@faa.gov>]
Sent: Friday, March 14, 2014 10:55 AM

To: Lori.Thursby@cardnotec.com; mark_spier@nps.gov; michael.strutt@tpwd.texas.gov; michelle.murray@faa.gov; NBaker@icfi.com; ngabriel@achp.gov; NSullivan@icfi.com; randy_stanley@nps.gov; robert_jess@fws.gov; rolando_garza@nps.gov; Ross.Melinchuk@tpwd.state.tx.us; Steve.Davis@spacex.com; Theresa de la Garza; theresa_ely@nps.gov; tom_keohan@nps.gov; Caryn.Schenewerk@spacex.com

Cc: Bill Martin; bryan_winton@fws.gov; Cheryl_Eckhardt@nps.gov; christine_whitacre@nps.gov; cvaughn@achp.gov; Daniel.Czelusniak@faa.gov; Daniel.Murray@faa.gov; Dawn_Whitehead@fws.gov; Jaclyn.Johnson@cardnotec.com; Katherine.Andrus@faa.gov; Kendal.Keyes@tpwd.texas.gov

Subject: Re: SpaceX Texas Launch Site Programmatic Agreement for final review and signature

All -

I apologize - I forgot to add a timeline for review of the document. We are asking for a 30-day review and signature. Therefore we are asking for final review and signature by April 7th. Please let me know if this will pose a problem.

Also - I'm cancelling Tuesday's meeting (March 18th). We have not finished developing our approach for the resolution of adverse effect. We hope to have an approach to you soon so we can start discussions on March 25th.

Stacey M. Zee
Commercial Space Transportation, AST-100
Federal Aviation Administration
800 Independence Ave, SW, Suite 325
Washington, DC 20591
(202)267-9305

From: Stacey Zee/AWA/FAA

AST-100, Space Transportation Development Div

To: Bill.Martin@thc.state.tx.us, bryan_winton@fws.gov, Cheryl_Eckhardt@nps.gov, christine_whitacre@nps.gov, cvaughn@achp.gov, Dawn_Whitehead@fws.gov, Kendal.Keyes@tpwd.texas.gov, mark_spier@nps.gov, michael.strutt@tpwd.texas.gov, ngabriel@achp.gov, randy_stanley@nps.gov, robert_jess@fws.gov, rolando_garza@nps.gov, Ross.Melinchuk@tpwd.state.tx.us, Theresa.deLaGarza@thc.state.tx.us, theresa_ely@nps.gov, tom_keohan@nps.gov

Cc: Daniel Czelusniak/AWA/FAA@FAA, Daniel Murray/AWA/FAA@FAA, Jaclyn.Johnson@cardnotec.com, Katherine Andrus/AWA/FAA@FAA, Lori.Thursby@cardnotec.com, Michelle Murray/AWA/FAA@FAA, NBaker@icfi.com, NSullivan@icfi.com, Steve.Davis@spacex.com

Date: 03/07/2014 12:48 PM

Subject: SpaceX Texas Launch Site Programmatic Agreement for final review and signature

All -

Attached is the SpaceX Texas Launch Site Programmatic Agreement (PA) for final review and signature. The PA incorporates changes based on comments provided by SHPO, USFWS, NPS, TPWD, and ACHP.

For USFWS, NPS, TPWD, and ACHP - please consider this a formal submission of the PA - no hardcopy will follow.

For SHPO - we are sending a hardcopy via FedEx to be considered a formal submission.

Please let me know if you have any questions. Our next call is scheduled for Tuesday, March 11th at 3pm eastern. We will discuss the next steps for the PA as it goes through final review and signature. We also will discuss the plan for moving ahead for resolution of adverse effect.

[attachment "20140305 FAA 106 PA for SpaceX Texas Launch Site v3.doc" deleted by Stacey Zee/AWA/FAA]

Stacey M. Zee
Commercial Space Transportation, AST-100
Federal Aviation Administration
800 Independence Ave, SW, Suite 325
Washington, DC 20591
(202)267-9305