

## **Attachment B: Compliance with 47 C.F.R. § 25.136(a)(4)**

Section 25.136 of the Commission's rules defines conditions that, if met, permit an earth station licensee to operate in accordance with the terms of its authorization without providing interference protection to Upper Microwave Flexible Use Service ("UMFUS") stations in the 27.5-28.35 GHz band.<sup>1</sup> The International Bureau has provided guidance to applicants on how to show compliance with the rule's specifications.<sup>2</sup> The following analysis demonstrates that the SES Laredo Earth Station meets all the requirements of Section 25.136(a)(4).

### **§ 25.136(a)(4)(i)**

The SES Laredo Earth Station will be located just outside of Laredo in Webb County, Texas. This site complies with Section 25.136(a)(4)(i), which states that an earth station can avoid the obligation to provide interference protection to UMFUS licensees only if the county where it is located contains no more than two other earth stations that are exempt from UMFUS protection requirements under Section 25.136(a). SES has searched the International Bureau's IBFS database and determined that there is currently one other earth station in Webb County licensed to operate in the 27.5-28.35 GHz band: E130034, licensed to Telefonica Global Solutions USA INC.

### **§ 25.136(a)(4)(ii)**

Consistent with the Commission's rules and the Siting Guidance Notice, SES has calculated the area within which the aggregate power flux density ("PFD") for SES's proposed antenna at the site is equal to or exceeds -77.6 dBm/m<sup>2</sup>/MHz. According to the 2020 census, Webb County has a population of 267,114.<sup>3</sup> As a result, the population within this PFD contour must be less than 450 to meet the relevant condition established as indicated in Table 1 to Section 25.136(a)(4)(ii) of the Commission's rules.<sup>4</sup> SES has determined that the contour satisfies that condition, as the total population within PFD the contour is zero.

The earth station parameters used to calculate the aggregate PFD contour are shown in the following table.

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<sup>1</sup> See 47 C.F.R. § 25.136(a)(4).

<sup>2</sup> International Bureau Issues Guidance on Siting Methodologies for Earth Stations Seeking to Operate in the 24.75-25.25 GHz, 27.5-28.35 GHz, 37.5-40 GHz, 47.2-48.2 GHz, and 50.4-51.4 GHz Frequency Bands to Demonstrate Compliance with Section 25.136, IB Docket No. 17-172, Report No. SPB-281, DA 20-631 (rel. June 16, 2020) (the "Siting Guidance Notice").

<sup>3</sup> See QuickFacts Webb County, Texas, United States Census Bureau, available at: <https://www.census.gov/quickfacts/webbcountytexas>.

<sup>4</sup> 25.136(a)(4)(ii), Table 1.

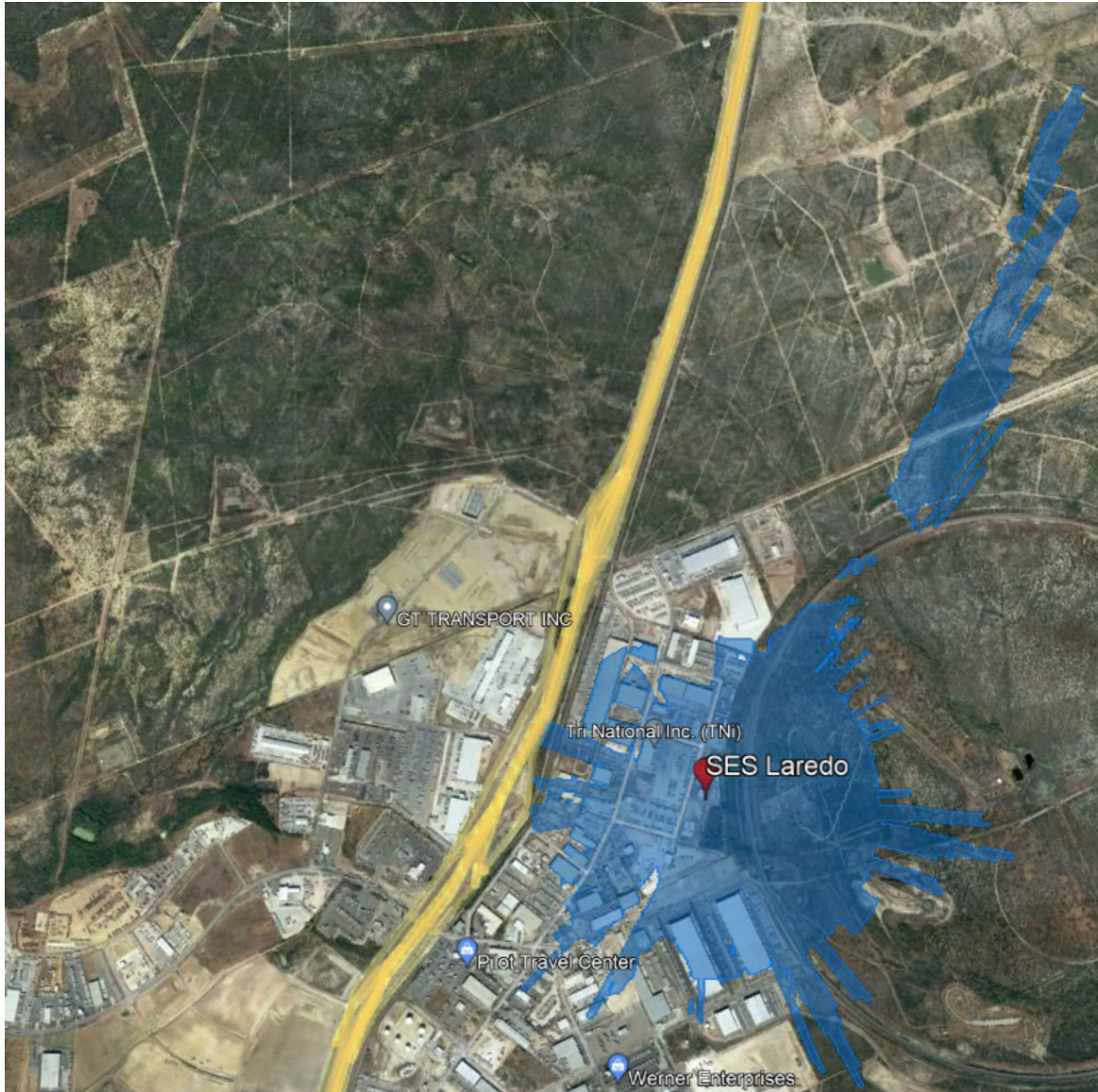
| Parameter        | Earth Station       |
|------------------|---------------------|
| Latitude         | 27° 41' 25.23" N.L. |
| Longitude        | 99° 27' 0.12" W.L.  |
| Antenna Size     | 6.1 meters          |
| EIRP Density     | 24.1 dBW/4 kHz      |
| Antenna Pattern  | ITU-R S.580         |
| Min. Elev. Angle | 41 degrees          |

In this analysis, SES has assumed the ITU-R P.452 propagation model and used 1 arc second resolution USGS Digital Terrain Elevation Data (“DTED”). Moreover, SES conducted a clutter analysis considering some of the surrounding buildings around the site. This is shown in the following figure.



*Figure 1: Proposed shielding along western side of the antenna*

SES developed the PFD contour for this site using the earth station parameters identified above. The resulting contour is shown in Figure 2. SES is attaching to this application the contour in KML file format, as suggested by the Siting Guidance Notice.



*Figure 2: PFD contour*

The population data for each census block is from the 2020 U.S. census data. The actual area method was used to assess how many people in a census block are within the PFD contour. By these calculations, SES determined that zero people in Webb County, Texas are within the PFD contour of the SES Laredo Earth Station, which complies with the population limits in Section 25.136(a)(4)(ii).

### § 25.136(a)(4)(iii)

The SES Laredo Earth Station will conform to the limitations in Section 25.136(a)(4)(iii). SES has performed a search on both the FHWA HEPGIS portal<sup>5</sup> and the Texas Department of Transportation website<sup>6</sup> to confirm that roads that intersect the SES Laredo Earth Station's PFD contour are not designated as Interstate, Other Freeways and Expressways, or Other Principal Arterial as shown in Figure 3 below.



Figure 2: 25.136 (a)(4)(iii) Compliance with Interstate, Other Freeways and Expressways, or Other Principal Arterial

Additionally, there are no major event venues, passenger railroads, or cruise ship ports within the contour. As a result, the SES Laredo Earth Station satisfies the requirements of Section 25.136(a)(4)(iii).

### § 25.136(a)(4)(iv)

Finally, SES has complied with Section 25.136(a)(4)(iv) for the SES Laredo Earth Station. That subsection specifies that the earth station applicant must successfully complete

<sup>5</sup> See U.S. Department of Transportation, Federal Highway Administration, National Highway System map. Available at: <https://hepgis.fhwa.dot.gov/fhwagis/>.

<sup>6</sup> See Texas Department of Transportation maps, available at: <https://www.txdot.gov/>.

coordination within its relevant PFD contour with respect to any “existing facilities constructed and in operation by the UMFUS licensee.”<sup>7</sup> Comsearch has submitted a frequency coordination notice on behalf of SES to all existing terrestrial licensees within the coordination contours of the SES Laredo Earth Station. The Commission’s Universal Licensing System shows that Cellco Partnership (“Verizon”) is the UMFUS license holder for Webb, TX in the 27.5-28.35 GHz frequency range.

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<sup>7</sup> 47 C.F.R. § 25.136(a)(4)(iv).