7/30/2025

Patrick Haggerty
Nebraska Broadband Office

RE: Nebraska BEAD Program
LEO Density Assessment
JEO Project No. 241512

Dear Director Haggerty:

JEO has assessed Low Earth Orbit (LEO) satellite solutions for the Nebraska BEAD program. The assessment focuses on the density of BSLs within DPAs vs the reported capacity of LEO technology. The results illustrate DPAs that pose a high risk of failure to meet NTIA minimum requirements with LEO solutions.

Documented LEO limitations include available satellites, beam quantities, and bandwidth per satellite. The enclosed study titled [1]Starlink Capacity Analysis v0.2 concludes that 7,850 Starlink satellites exist. A satellite can produce 16 beams, each covering 63 square miles with 6 Gbps down and .4 Gbps up. The globe has ~19 million sq miles of inhabited land with 420 people per sq mile. 7,850 existing satellites equate to 1 per 2,459 sq mile.

NBEAD DPAs include ~14,000 BSLs and cover 11,123 square miles of Nebraska. There are 2,830 BSLs located within 302 separate, square mile segments that include over 6 BSLs. These numbers suggest multiple satellites would be required for Nebraska coverage alone. Knowing that a satellite can effectively cover 1,008 sq miles it is reasonable to conclude that there are not enough satellites available to provide all NBEAD locations with BEAD required coverage.

The resulting limitation we used for NBEAD evaluation comes to [1]6.6 users per square mile while meeting BEAD program service requirements. Enclosed is a list of NBEAD DPAs that include square miles with densities exceeding 6 BSLs. Therefore, these DPAs cannot be served by existing LEO solutions under BEAD program requirements considering documented LEO limitations.

Sincerely,

Matthew Baker, Traffic Project Manager

Enclosures: DPA list impacted by assessment
[1] Starlink Capacity Analysis v0.2

cc: Patrick Redmond
Diane Lowe

DPA	# Sq miles exceeding density of 6	DPA	# Sq miles exceeding density of 6	DPA	# Sq miles exceeding density of 6	DPA	# Sq miles exceeding density of 6
D10-04	1	M11-01	3	P10-05	2	R11-03	3
D10-05	3	M11-02	4	P11-01	2	R11-04	9
D10-06	1	M11-03	1	P11-02	1	R11-05	9
D7-04	8	M11-04	1	P13-01	2	R12-01	7
D8-01	1	M12-01	1	P8-01	3	R12-02	8
E10-01	1	M12-02	3	P8-03	1	R12-03	5
E6-01	2	M12-03	5	P8-04	5	R13-01	3
E7-01	2	M13-01	2	Q10-01	1	R13-02	1
F9-01	1	M7-01	4	Q10-02	4	R8-01	1
G8-01	1	N10-01	1	Q11-01	5	R8-04	1
H10-01	4	N10-02	2	Q11-02	4	R8-05	4
H11-01	1	N11-02	4	Q11-03	3	S10-01	8
J10-01	9	N11-03	1	Q11-04	5	S10-02	3
J10-02	8	N12-01	8	Q12-01	1	S10-03	6
J11-01	3	O10-01	5	Q12-02	3	S11-01	6
J11-02	6	O10-02	4	Q13-01	1	S13-01	1
J11-03	1	O10-03	2	Q13-02	4	T10-01	12
K13-01	1	O10-04	1	Q8-01	1	T11-01	8
K13-03	1	O10-05	2	Q8-02	2	T12-01	1
L11-01	5	O10-06	1	Q9-01	3	T12-02	3
L11-02	2	O12-01	4	Q9-02	1		
L11-03	1	O8-03	1	R10-01	9		
L12-01	1	O9-06	2	R10-02	2		
L12-02	2	P10-02	3	R11-01	2		
L12-05	1	P10-04	1	R11-02	3		

7/30/2025

Patrick Haggerty
Nebraska Broadband Office

RE: Nebraska BEAD Program
Wireless Radio Assessment
JEO Project No. 241512

Dear Director Haggerty:

JEO has assessed Wireless Radio technology solutions the Nebraska BEAD program. The assessment focused on density, topography, and trees cover or other obstructions that would degrade signals. The results illustrate DPAs that pose a high risk of failure to meet NTIA minimum requirements with wireless solutions.

Documented limitations with wireless radio solutions mainly focus on line-of-sight connection or lack thereof and density of overlapping signals that can degrade the capacity. With regards to density of locations, DPA L12-05 can be considered a priority for non-wireless solutions. The attached list consists of DPAs, with a statistically high percentage (30%) of locations that prove challenging to meet BEAD requirements due to obstructions or topography of the surrounding landscape. Therefore, they can be considered a priority for non-wireless solutions.

Sincerely,

Matthew Baker, Traffic Project Manager

Enclosures: DPA list impacted by assessment

cc: Patrick Redmond
Diane Lowe

dpa_id	difficult locations	total locations	percent difficult	dpa_id	difficult locations	total locations	percent difficult
D7-04	181	267	67.79	Q10-01	25	64	39.06
L7-01	37	55	67.27	E6-01	20	52	38.46
D10-03	28	44	63.64	M11-04	45	118	38.14
J11-03	17	28	60.71	G10-01	18	48	37.50
D6-02	27	47	57.45	O9-06	37	100	37.00
D6-04	22	40	55.00	O10-02	63	173	36.42
E10-01	28	51	54.90	D7-02	20	55	36.36
D10-01	15	29	51.72	K13-02	29	80	36.25
T12-02	40	81	49.38	P8-04	38	106	35.85
F9-01	30	61	49.18	R13-03	15	42	35.71
E7-01	32	66	48.48	M11-07	16	45	35.56
D6-03	33	69	47.83	D6-01	18	51	35.29
F10-01	29	61	47.54	H10-01	58	167	34.73
M11-06	37	81	45.68	D10-02	16	47	34.04
P10-01	30	66	45.45	T11-01	62	185	33.51
P10-04	10	23	43.48	Q13-02	36	109	33.03
F6-02	23	53	43.40	S10-03	54	169	31.95
M13-02	20	49	40.82	O9-07	15	47	31.91
R8-05	22	54	40.74	O9-03	22	69	31.88
O10-01	63	155	40.65	O12-01	47	148	31.76
K13-01	43	106	40.57	T12-01	26	82	31.71
D8-01	14	35	40.00	S13-01	29	93	31.18
O10-06	73	184	39.67	P10-03	18	59	30.51
S11-01	64	163	39.26	M12-04	10	33	30.30
N6-01	27	69	39.13				