UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and
Information Administration
Washington, D.C. 20230

February 19, 2021

Mr. Ronald T. Repasi
Acting Chief, Office of Engineering and Technology
Federal Communications Commission
45 L Street, NE
Washington, DC 20554

Mr. Joel Taubenblatt
Acting Chief, Wireless Telecommunications Bureau
Federal Communications Commission
45 L Street, NE
Washington, DC 20554

RE: Amendment of the Commission's Rules with Regard to Facilitating Shared Use in the 3100-3550 MHz Band (WT Docket No. 19-348)

Dear Mssrs. Repasi and Taubenblatt:

Congress recently enacted, as part of the Consolidated Appropriations Act, the Beat CHINA for 5G Act of 2020, which requires the Federal Communications Commission ("Commission" or "FCC") to revise the non-Federal allocation for the 3450-3550 MHz band to permit flexible-use services and to commence an auction for new initial licenses for the use of a portion or all of the band not later than December 31, 2021.[1] In light of this legislation, the National Telecommunications and Information Administration ("NTIA") strongly encourages the Commission to issue a Second Report and Order ("Second R&O") in the above-referenced proceeding and to commence competitive bidding for the 3450-3550 MHz band in the contiguous United States as expeditiously as practical.[2]

As a result of the further collaborative efforts between NTIA, the Department of Defense ("DoD"), and the Commission in this proceeding, please find enclosed DoD's more refined geographic parameters for each proposed Cooperative Planning Area ("CPA") and Periodic Use

[1] *See* Beat China by Harnessing Important, National Airwaves for 5G Act of 2020, Pub. L. No. 116-260, Consolidated Appropriations Act, 2021, Div. FF, Title IX, Sec. 905(d) (Dec. 27, 2020) ("Beat CHINA for 5G Act of 2020").

[2] Although NTIA does not object to a nationwide allocation for new non-federal fixed and mobile services on a co-primary basis, the Second R&O and forthcoming auction notices should specifically exclude Hawaii, Alaska, the Gulf of Mexico, and other areas and U.S. possessions that have not been subject to technical evaluation by federal incumbent users. In separate correspondence, NTIA has transmitted the initial estimates of relocation or sharing costs and timelines for the eligible frequencies in the 3450-3550 MHz band pursuant to Section 113(g)(4)(A) of the NTIA Organization Act, as amended, 47 U.S.C. § 923(g)(4)(A). *See* Letter from Carolyn Roddy, Dep'y Ass't Sec'y for Commc'ns and Info., NTIA, to Ajit Pai, Chairman, FCC (Jan. 14, 2021).

Area ("PUA") set forth in the Further Notice of Proposed Rulemaking ("*FNPRM*").[3] In addition, on behalf of DoD, NTIA provides specific requirements for two of the CPAs, more details on Federal/non-Federal coordination procedures, and other information and views for the record.

CPA/PUA Parameters

The spectrum sharing framework developed by America's Mid-Band Initiative Team ("AMBIT") and proposed in the *FNPRM* will allow 5G development to progress in the private sector while, at the same time, enabling the U.S. military to continue to use that spectrum to meet national security requirements. In NTIA's September 2020 letter (and in the *FNPRM*), 33 locations of the proposed CPAs were identified, 24 of which include PUAs.[4] These areas represent key military training facilities, important test sites, and strategically significant Navy home ports and shipyards. The CPAs and PUAs proposed by DoD and NTIA are not exclusion zones, but are areas where military systems require protection from harmful interference from new non-federal operations, either indefinitely (in CPAs) or episodically (in PUAs), in support of national security missions and to meet readiness requirements.

Several parties responding to the *FNPRM* requested additional information on the geographic definitions of the CPAs and PUAs.[5] The enclosure to this letter provides the more detailed, refined geographic coordinates for the CPAs and PUAs for inclusion in the appendix cross-referenced in new footnote US431B to the U.S. Table of Frequency Allocations. Depending on the types of military systems used at these locations, the scope and purpose of each CPA and PUA differ in certain respects. For example, the enclosure provides more specific information for the Little Rock CPA and the Ft. Bragg CPA and PUA in light of certain airborne radar operations there.[6] In addition, to the extent that higher power DoD radars located at certain

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[3] *See* Facilitating Shared Use in the 3100-3550 MHz Band, *Report and Order and Further Notice of Proposed Rulemaking*, WT Docket No. 19-348, 35 FCC Rcd 11078, 11094-95 para. 46 (Oct. 2, 2020), *available at* https://docs.fcc.gov/public/attachments/FCC-20-138A1.pdf; Erratum, DOC-367621 at App. D, § 2.106 US431B (Oct. 20, 2020), *available at* https://ecfsapi.fcc.gov/file/1019118746415/DOC-367621A1.pdf ("US431B").

[4] S*ee* Letter from Charles Cooper, Assoc. Admin., Off. of Spect. Mgmt., NTIA, to Ronald Repasi, Acting Chief, Off. of Eng'g and Tech., FCC, and Donald Stockdale, Chief, Wireless Telecomm. Bureau, FCC (Sept. 8, 2020), *available at* https://ecfsapi.fcc.gov/file/10909026604943/NTIA-OSM%20Letter%20to%20FCC-OETWTB%20re%203450-3550%20MHz%20FNPRM%20(9-8-20).pdf (*NTIA Sept. 2020 Letter*); *see also FNPRM* at para. 46 and Appendix D.

[5] *See, e.g.*, CTIA Comments at 9 (Nov. 20, 2020), CommScope Comments at 6-7 (Nov. 20, 2020), Ericsson Comments at 9 (Nov. 20, 2020), Google Comments at 6 (Nov. 20, 2020), AT&T Services Comments at 8-9 (Nov. 20, 2020), and Verizon Comments at 8-9 (Nov. 20, 2020). All comments cited in this letter were filed in WT Docket No. 19-348.

[6] In these areas, coordination will not be required for non-federal use of the upper 60 megahertz of spectrum in the band (3490-3550 MHz). For the Fort Bragg CPA and PUA, 60 megahertz of spectrum (3490-3550 MHz) will be available for commercial use immediately without any coordination, and the CPA/PUA in the lower 40 megahertz (3450-3490 MHz) is necessary to accommodate periodic airborne radiolocation operations. However, at Little Rock, the 3490-

CPAs could result in harmful interference or potential damage to commercial facilities in close proximity, those locations are disclosed in the enclosure.[7]

The technical assumptions used by DoD for 5G equipment to generate the geographic parameters were provided in NTIA's September 2020 letter, on which the *FNPRM* sought comment.[8] There were no responses to the *FNPRM* proposing different 5G equipment assumptions. Nevertheless, we understand that actual flexible use deployments by commercial licensees are expected to use lower towers and lower power, which should result in greater industry access to the spectrum in and around the CPAs and PUAs. NTIA urges the Commission to replace the initial proposed table of CPAs and PUAs with the one set forth in the enclosure. Additional detailed information about the DoD systems in the CPAs and PUAs will become available with the publication of agency transition plans and in connection with the coordination process addressed in the next part of this letter.[9]

Federal/Non-Federal Coordination Process

The *FNPRM* sought comment on coordination between federal incumbents and new commercial flexible use licensees in the 3450-3550 MHz band.[10] Several parties responding to the *FNPRM* support using the AWS-3 coordination framework.[11] NTIA agrees with these parties and proposes leveraging the positive experiences and tools of the AWS-3 coordination procedures to facilitate coordination within the CPAs and PUAs. Specifically, DoD will develop a new coordination portal to support the CPA/PUA framework and will serve as a single point of contact for all 3450-3550 MHz coordination requests. An Incumbent Informing Capability (IIC) could also be developed to facilitate federal/non-federal coordination.[12] DoD can use the IIC to

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3550 MHz segment will be available for commercial use without coordination after approximately 12 months from the close of the auction.

[7] *See, e.g.*, The 4.9 GHz Band Transferred from Federal Government Use, *Memorandum Opinion and Order and Third Report and Order*, WT Docket No. 00-32, 18 FCC Rcd 9152, 9170 paras. 43-44 and 9191 Appendix C (May 2, 2003), *available at* https://docs.fcc.gov/public/attachments/FCC-03-99A1.pdf (addressing concerns regarding U.S. Navy Cooperative Engagement Capability (CEC) high-power operations that could inhibit use of the lower portion of the 4.9 GHz band in large areas along the East, West, and Gulf Coasts and disclosing CEC sites).

[8] *FNPRM* at para. 49.

[9] Not later than 120 days before the commencement of the auction of the eligible frequencies, NTIA will publish the publicly available transition plans on NTIA's website. *See* 47 U.S. C. § 923(h)(5).

[10] *FNPRM* at paras. 47-48.

[11] *See, e.g.,* 5G Americas Comments at 12-13 (Nov. 20, 2020), CommScope Comments at 8-9, Ericsson Comments at 7, Nokia Comments at 6 (Nov. 20, 2020), Verizon Comments at 9.

[12] *See* Charles Cooper, Assoc. Admin., Off. of Spect. Mgmt., *NTIA Pursues Innovative Spectrum Sharing Plan That Could Deliver Boost to 5G* (Dec. 15, 2020), https://www.ntia.gov/blog/2020/ntia-pursues-innovative-spectrum-sharing-plan-could-deliver-boost-5g.

schedule the time and frequency span for each PUA. Several parties responding to the *FNPRM* support using an IIC as part of the coordination process in this band.[13]

NTIA also encourages the development of operator-to-operator arrangements to document specific notification and activation procedures.[14] Under such arrangements, DoD could agree to not activate a PUA if a mutually agreeable technical interference mitigation approach is identified. For example, during the CPA coordination process, the DoD and the licensees could determine technical parameters (such as base station power, filtering, antenna height, and antenna sector pointing) so that new commercial operations would not interfere with protected incumbent federal systems, or so that any risk of harmful interference to non-federal operations is mitigated so long as the non-federal users are operating pursuant to the agreement. Additionally, to the extent that higher power DoD radars located at the CPAs labeled in the enclosure may cause harmful interference to commercial operations within these zones, NTIA recommends that DoD and licensees include in coordination agreements language that acknowledges the risks of harmful interference inside of these zones (along the lines set forth in the AWS-3 coordination agreement template),[15] unless the operators are able to reach an agreement that provides additional assurances or protections to each operator. We encourage federal and non-federal operators to reach an agreement that will provide as much certainty as possible to each operator that it will not be subject to harmful interference if it operates pursuant to such agreement.

Going forward, in addition to posting the approved transition plans, NTIA and DoD will provide supplemental information to potential bidders similar to the DoD AWS-3 Workbook and NTIA recommends issuing a joint Public Notice, like with AWS-3, with more details on federal notification and coordination requirements. These supplemental materials (and information conveyed in upcoming workshops) will, in response to several commenters' requests, likely include guidance about anticipated received power levels from DoD's high power operations, updates on the coordination portal and IIC development and procedures, methods and means for sharing proprietary and classified information (*e.g.*, through "trusted agents"), and descriptions of potential national emergency scenarios.[16]

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[13] *See, e.g.*, 5G Americas Comments at 14, CommScope Comments at 12, Federated Wireless Comments at 11 (Nov. 20, 2020), Google Comments at 11, Nokia Comments at 6, Sony Electronics Inc. Comments at 1-2 (Nov. 20, 2020), Wireless Internet Service Providers Association Comments at 23 (Nov. 20, 2020).

[14] *See, e.g.* Verizon Comments at 7 (supporting plan to develop mutually acceptable coordination agreements with individual licensees and to identify methods to further increase the commercial utility of the spectrum in and around each CPA and PUA by be tailoring them to meet the licensee and DoD's requirements for each CPA or PUA).

[15] *See* Coordination Procedures in the 1695-1710 MHz and 1755-1780 MHz Bands, *FCC/NTIA Joint Public Notice*, GN Docket No. 13-185, 29 FCC Rcd 8527, 8567 Appendix C-3 (July 18, 2014), *available at* https://docs.fcc.gov/public/attachments/DA-14-1023A1.pdf; *see also* FCC and NTIA, Coordination Procedures in the 1695-1710 MHz and 1755-1780 MHz Bands, *Notice*, 79 Fed. Reg. 54710 (Sept. 12, 2014), *available at* https://www.govinfo.gov/content/pkg/FR-2014-09-12/pdf/2014-21748.pdf.

[16] *See*, *e.g.*, Verizon Comments at 6-7, AT&T Services Comments at 8, CTIA Comments at 11, CommScope Comments at 3-5.

National Emergencies

Another issue that attracted the attention of several commenting parties is the Commission's proposal in the *FNPRM*, per NTIA's request, to include language in US431B that would specifically authorize federal users to fulfill military operational needs within the 3450-3550 MHz band "[i]n time of war or a threat of war, or a state of public peril or disaster or other national emergency (collectively 'national emergency')."[17] Several commenters sought clarification on how the coordination framework would provide notification to commercial licensees that would need to terminate or otherwise adjust their operations to prevent harmful interference to the federal operations during a national emergency.[18] Some commenters questioned whether a separate requirement authorizing DoD use during such times is necessary in light of section 706(c) of the Communications Act, pursuant to which a national emergency would be triggered by a proclamation by the President.[19]

Upon further review, NTIA and DoD believe that a specific national emergency provision in US431B is not necessary. Instead, in the extremely rare circumstances under which such operational needs may arise, they can be implemented for the 3450-3550 MHz and other bands under section 706(c) or other relevant authorities.[20] While language similar to that found in section 706(c) was originally proposed by NTIA for US431B, this band-specific provision in an allocation footnote is not required to access the 3450-3550 MHz band to meet operational mission requirements during a national emergency in light of existing authorities.[21]

We understand the importance of providing adequate information to permit prospective licensees to develop business plans and assess risks in this band. However, the circumstances

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[17] *See FNPRM* at para. 53 and Appendix D, US431B; *see also* NTIA Sept. 2020 Letter at 2 n. 4 (*citing* 47 U.S.C. § 606(c) and 47 C.F.R. Part 214) and Enclosure 1.

[18] *See, e.g.*, Ericsson Comments at 10, Verizon Comments at 7-8.

[19] 47 U.S.C. § 606(c). *See, e.g.*, T-Mobile Comments at 15-16 (Nov. 20, 2020), AT&T Services Comments at 9-10, CTIA Comments at 12.

[20] The President, if deemed necessary in the interest of national security or defense, may suspend or amend, for such time as the President may see fit, the rules and regulations applicable to any or all stations or devices capable of emitting electromagnetic radiations within the jurisdiction of the United States as prescribed by the Commission. 47 U.S.C. § 606(c). No President has invoked this provision since 1951. *See* Executive Order No. 10312, 16 Fed. Reg. 12452 (Dec. 12, 1951), *available at* https://www.govinfo.gov/content/pkg/FR-1951-12-12/pdf/FR-1951-12-12.pdf. *See, e.g*, 47 U.S.C. §§ 305(a), 902(b)(2)(A) and (K) (governing spectrum bands allocated for use by radio stations belonging to and operated by the United States).

[21] *See* 47 U.S.C. § 309(h), pursuant to which every FCC license "shall be subject in terms to the right of use or control conferred by section 606 of this title." Similarly, nothing under the Commission's auction authority or in the use of competitive bidding shall limit or otherwise affect, among other provisions, the requirements of section 309(h), section 606, or any other provision of the Communications Act. 47 U.S.C. § 309(j)(6)(B). *See also* 47 C.F.R. Parts 214 and 300 and NTIA, Manual of Regulations and Procedures for Federal Radio Frequency Management, Chapter 7: Authorized Frequency Usage, at §§ 7.3.4 and 7.3.6 (Sept. 2017), *available at* https://www.ntia.doc.gov/files/ntia/publications/redbook/2017-09/7_17_9.pdf.

under which the military would need to regain access outside of the CPAs and PUAs are extremely remote. As with other bands, it would be difficult to provide absolute certainty and predictability regarding the situations under which section 706 (or other authorities) might be invoked as some parties requested. Nevertheless, as suggested by Verizon, through upcoming workshops or appropriate venues, additional information may be provided to prospective bidders with respect to any such emergencies necessitating that DoD and NTIA seek to revisit these operational mission requirements in this band.[22]

Radar Manufacturing and Integration Facilities

There are several radar manufacturing and integration facilities which require access to the 3450-3550 MHz band to perform experimentation and testing for radionavigation and other systems contracted for by federal agencies.[23] These facilities typically operate in an outdoor environment to accommodate physically large operational systems. It is critical that these facilities retain access to the spectrum for this testing and experimentation so federal agencies' contracting requirements will be fulfilled. We request that the Commission continue to work with NTIA, DoD, and non-federal stakeholders to develop a coordination policy that ensures that non-federal experimental licensees in the 3450-3550 MHz band are able to continue to access spectrum to support their critical functions in support of DoD contracts while minimizing potential impacts to the 3.45 GHz Service.[24]

* * * * *

NTIA looks forward to our further collaborative efforts in this important proceeding. If you have any questions, please contact Derek Khlopin, Acting Chief, Spectrum Affairs and Information Division, Office of Spectrum Management, at dkhlopin@ntia.gov or 202-482-2141.

Sincerely,

Charles Cooper

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Date: 2021.02.19 16:19:59 -05'00'

Charles Cooper
Associate Administrator

Enclosure

[22] *See* Verizon Comments at 8-9. In planning and preparation of such emergencies, DoD may be able to provide additional classified information to licensees' cleared personnel about the particular military systems that would likely need to be deployed.

[23] *See, e.g.,* Aerospace Industries Association Comments at 5 (Nov. 20, 2020), Lockheed Martin Corporation Comments at 4 (Nov. 20, 2020).

[24] *See FNPRM* at para. 21; *see also* 47 C.F.R. § 5.84 and Promoting Expanded Opportunities for Radio Experimentation and Market Trials Under Part 5 of the Commission's Rules, *Report and Order*, E.T. Docket No. 10-236, 28 FCC Rcd 758, 789 para. 81 (Jan. 31, 2013), *available at* https://docs.fcc.gov/public/attachments/FCC-13-15A1.pdf (In cases in which the Commission imposes a coordination requirement on program experimental licensees, it expects that all parties will cooperate to work in good faith to expeditiously resolve any concerns.).

ENCLOSURE

For Appendix A to Part 2 — Department of Defense Cooperative Planning Areas and Periodic Use Areas

The following table identifies the coordinates for the location of each Cooperative Planning Area (CPA) and Periodic Use Area (PUA) described in US431B in the list of United States (U.S.) Footnotes in Section 2.106 of this part. An area may be represented as either a polygon made up of several corresponding coordinates or a circle represented by a center point and a radius. If a CPA has a corresponding PUA, the PUA coordinates are provided. A location marked with an asterisk (*) indicates a high-power federal radiolocation facility. If a location includes a Shipboard Electronic Systems Evaluation Facility (SESEF) attached to a homeport, it specifies the associated SESEF.

For the CPA at Little Rock, AR, after approximately 12 months from the close of the auction, non-Federal operations shall coordinate with Federal systems in only the 3450-3490 MHz band segment and the 3490-3550 MHz band segment will be available for non-federal use without coordination. At Fort Bragg, NC, non-Federal operations shall coordinate with Federal systems in only the 3450-3490 MHz band segment.

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Little Rock	AR	37° 28’ 34” 37° 42’ 55” 36° 38’ 29” 34° 57’ 57” 32° 09’ 36” 31° 51’ 52” 32° 12’ 11” 33° 42’ 22” 35° 17’ 35” 36° 12’ 18”	94° 28’ 24” 88° 54’ 36” 87° 52’ 34” 88° 09’ 26” 92° 06’ 54” 93° 10’ 35” 94° 37’ 07” 95° 49’ 52” 96° 23’ 06” 96° 08’ 46”	N/A	N/A	N/A	N/A

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Yuma Proving Grounds	AZ	33° 36’ 44” 34° 03’ 08” 34° 03’ 56” 33° 26’ 54” 32° 51’ 17” 32° 16’ 54” 32° 14’ 39” 32° 20’ 06” 32° 28’ 30” 32° 53’ 20”	115° 10’ 44” 114° 41’ 08” 114° 05’ 56” 113° 03’ 54” 113° 02’ 17” 113° 45’ 54” 114° 40’ 39” 114° 55’ 06” 115° 02’ 30” 115° 09’ 20”	N/A	33° 36’ 44” 34° 03’ 08” 34° 03’ 56” 33° 26’ 54” 32° 51’ 17” 32° 16’ 54” 32° 14’ 39” 32° 20’ 06” 32° 28’ 30” 32° 53’ 20”	115° 10’ 44” 114° 41’ 08” 114° 05’ 56” 113° 03’ 54” 113° 02’ 17” 113° 45’ 54” 114° 40’ 39” 114° 55’ 06” 115° 02’ 30” 115° 09’ 20”	N/A
Camp Pendleton	CA	33° 21’ 46”	117° 25’25”	50	N/A	N/A	N/A
Edwards Air Force Base	CA	35º 19’ 16” 35º 17’ 54” 35º 11’ 43” 35º 00’ 52” 34º 44’ 17” 34º 34’ 16” 34º 26’ 55” 34º 28’ 59” 34º 41’ 36” 35º 07’ 32”	118º 03’ 16” 117º 26’ 54” 117º 15’ 43” 117º 10’ 52” 117º 10’ 17” 117º 19’ 16” 117º 47’ 55” 118º 16’ 59” 118º 28’ 36” 118º 25’ 32”	N/A	35º 19’ 16” 35º 17’ 54” 35º 11’ 43” 35º 00’ 52” 34º 44’ 17” 34º 34’ 16” 34º 26’ 55” 34º 28’ 59” 34º 41’ 36” 35º 07’ 32”	118º 03’ 16” 117º 26’ 54” 117º 15’ 43” 117º 10’ 52” 117º 10’ 17” 117º 19’ 16” 117º 47’ 55” 118º 16’ 59” 118º 28’ 36” 118º 25’ 32”	N/A
National Training Center	CA	36° 03’ 31” 36° 03’ 09” 35° 41’ 46” 35° 07’ 24” 34° 42’ 43” 34° 44’ 22” 35° 02’ 28” 35° 34’ 49”	117° 00’ 45” 116° 20’ 43” 115° 44’ 31” 115° 44’ 09” 116° 17’ 58” 117° 05’ 19” 117° 35’ 18” 117° 27’ 37”	N/A	36° 03’ 31” 36° 03’ 09” 35° 41’ 46” 35° 07’ 24” 34° 42’ 43” 34° 44’ 22” 35° 02’ 28” 35° 34’ 49”	117° 00’ 45” 116° 20’ 43” 115° 44’ 31” 115° 44’ 09” 116° 17’ 58” 117° 05’ 19” 117° 35’ 18” 117° 27’ 37”	N/A

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Naval Air Weapons Station, China Lake*	CA	36º 36' 42" 35º 54' 45" 35º 00' 01" 34º 54' 34" 35º 44' 22" 36º 30' 18"	117º 20' 42" 116º 31' 45" 116º 39' 01" 117º 26' 34" 118º 17' 22" 118º 07' 18"	N/A	36º 36' 42" 35º 54' 45" 35º 00' 01" 34º 54' 34" 35º 44' 22" 36º 30' 18"	117º 20' 42" 116º 31' 45" 116º 39' 01" 117º 26' 34" 118º 17' 22" 118º 07' 18"	N/A
Point Mugu	CA	34° 06' 44"	119° 06' 36"	38	34° 06' 44"	119° 06' 36"	38
San Diego* (Includes Point Loma SESEF)	CA	33° 04' 10" 32° 27' 19" 32° 33' 29" 32° 47' 16" 33° 01' 20" 33° 20' 36" 33° 24' 36" 32° 52' 54" 33° 04' 10"	117° 35' 40" 118° 00' 37" 116° 51' 08" 116° 28' 05" 116° 31' 05" 116° 47' 10" 117° 00' 51" 117° 09' 35" 117° 35' 40"	N/A	N/A	N/A	N/A
Twentynine Palms	CA	34° 06' 44"	116° 06' 36"	75	N/A	N/A	N/A
Eglin Air Force Base (Includes Cape San Blas site)	FL	Eglin and Santa Rosa Island: 30º 29' 28.5" Cape San Blas: 29º 40' 37"	Eglin and Santa Rosa Island: 86º 45' 00" Cape San Blas: 85º 20' 50"	35	Eglin and Santa Rosa Island: 30º 29' 28.5" Cape San Blas: 29º 40' 37"	Eglin and Santa Rosa Island: 86º 45' 00" Cape San Blas: 85º 20' 50"	35
Mayport* (Includes Mayport SESEF)	FL	30° 23' 42"	81° 24' 41"	64	N/A	N/A	N/A
Pensacola*	FL	30° 20' 50	87° 18' 40"	93	30° 20' 50	87° 18' 40"	93

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Joint Readiness Training Center	LA	31° 54’ 23” 31° 50’ 54” 31° 18’ 13” 30° 46’ 33” 30° 29’ 14” 30° 46’ 22” 31° 25’ 16”	93° 20’ 53” 92° 52’ 46” 92° 26’ 31” 92° 28’ 32” 93° 04’ 01” 93° 41’ 26” 94° 03’ 19”	N/A	31° 54’ 23” 31° 50’ 54” 31° 18’ 13” 30° 46’ 33” 30° 29’ 14” 30° 46’ 22” 31° 25’ 16”	93° 20’ 53” 92° 52’ 46” 92° 26’ 31” 92° 28’ 32” 93° 04’ 1” 93° 41’ 26” 94° 03’ 19”	N/A
Chesapeake Beach*	MD	38° 39’ 24”	76° 31’ 41”	95	38° 39’ 24”	76° 31’ 41”	95
Naval Air Station, Patuxent River	MD	38° 26’ 22” 38° 51’ 51” 38° 28’ 11” 38° 03’ 40” 37° 45’ 33” 37° 34’ 34” 37° 38’ 10” 38° 09’ 32” 38° 18’ 46” 38° 26’ 59”	76° 14’ 12” 75° 48’ 34” 75° 28’ 53” 75° 30’ 31” 75° 45’ 50” 76° 20’ 09” 76° 44’ 37” 76° 29’ 28” 76° 34’ 36” 76° 26’ 27”	N/A	38° 33’ 38” 39° 11’ 10” 38° 38’ 51” 37° 52’ 13” 37° 29’ 44” 37° 10’ 24” 37° 20’ 05” 38° 01’ 11” 38° 20’ 54” 38° 35’ 47”	76° 07’ 29” 75° 29’ 28” 75° 00’ 40” 75° 03’ 24” 75° 22’ 25” 76° 16’ 42” 77° 06’ 52” 76° 36’ 06” 76° 46’ 41” 76° 30’ 02”	N/A
St. Inigoes*	MD	38° 08’ 41”	76° 26’ 03”	87	38° 08’ 41”	76° 26’ 03”	87

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Bath*	ME	44° 02’ 29” 43° 52’ 27” 43° 48’ 53” 43° 32’ 50” 43° 27’ 16” 43° 44’ 26” 43° 54’ 57” 44° 06’ 56” 44° 17’ 02” 44° 26’ 54” 44° 36’ 16” 44° 33’ 45” 44° 57’ 05” 44° 56’ 27” 44° 32’ 13” 44° 24’ 08” 44° 02’ 29”	70° 10’ 41” 70° 10’ 29” 70° 01’ 06” 69° 57’ 30” 69° 42’ 52” 69° 13’ 52” 69° 24’ 50” 69° 25’ 13” 69° 16’ 56” 69° 45’ 13” 69° 56’ 50” 70° 04’ 01” 70° 14’ 55” 70° 19’ 38” 70° 08’ 17” 70° 36’ 36” 70° 10’ 41”	N/A	44° 02’ 29” 43° 52’ 27” 43° 48’ 53” 43° 32’ 50” 43° 27’ 16” 43° 44’ 26” 43° 54’ 57” 44° 06’ 56” 44° 17’ 02” 44° 26’ 54” 44° 36’ 16” 44° 33’ 45” 44° 57’ 05” 44° 56’ 27” 44° 32’ 13” 44° 24’ 08” 44° 02’ 29”	70° 10’ 41” 70° 10’ 29” 70° 1’ 6” 69° 57’ 30” 69° 42’ 52” 69° 13’ 52” 69° 24’ 50” 69° 25’ 13” 69° 16’ 56” 69° 45’ 13” 69° 56’ 50” 70° 04’ 01” 70° 14’ 55” 70° 19’ 38” 70° 08’ 17” 70° 36’ 36” 70° 10’ 41”	N/A
Pascagoula*	MS	30° 20’ 42”	88° 34’ 17”	80	30° 20’ 42”	88° 34’ 17”	80
Camp Lejeune	NC	34° 37’ 51”	77° 24’ 28”	54	N/A	N/A	N/A
Cherry Point	NC	34° 54’ 57”	76° 53’ 24”	38	N/A	N/A	N/A
Fort Bragg	NC	37° 35’ 01” 37° 45’ 56” 37° 22’ 33” 36° 38’ 56” 34° 43’ 13” 33° 29’ 44” 33° 24’ 04” 34° 01’ 05” 35° 27’ 24” 36° 27’ 46”	79° 31’ 19” 77° 14’ 14” 76° 18’ 30” 75° 51’ 26” 76° 15’ 37” 78° 29’ 53” 80° 29’ 07” 81° 23’ 49” 81° 37’ 00” 81° 22’ 49”	N/A	37° 35’ 01” 37° 45’ 56” 37° 22’ 33” 36° 38’ 56” 34° 43’ 13” 33° 29’ 44” 33° 24’ 04” 34° 01’ 05” 35° 27’ 24” 36° 27’ 46”	79° 31’ 19” 77° 14’ 14” 76° 18’ 30” 75° 51’ 26” 76° 15’ 37” 78° 29’ 53” 80° 29’ 07” 81° 23’ 49” 81° 37’ 00” 81° 22’ 49”	N/A

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Portsmouth*	NH	42° 23’ 06” 42° 25’ 05” 42° 21’ 36” 42° 18’ 28” 42° 13’ 01” 42° 06’ 30” 42° 02’ 54” 42° 08’ 03” 42° 10’ 25” 42° 15’ 39” 42° 22’ 44” 42° 34’ 56” 42° 52’ 26” 43° 13’ 48” 43° 31’ 21” 43° 45’ 21” 43° 59’ 20” 43° 36’ 10” 43° 49’ 27” 43° 27’ 40” 43° 00’ 57” 42° 44’ 40” 42° 51’ 47” 42° 33’ 46” 42° 24’ 24” 42° 23’ 06”	71° 10’ 23” 71° 05’ 43” 71° 00’ 54” 70° 54’ 35” 70° 44’ 53” 70° 41’ 11” 70° 37’ 44” 70° 33’ 35” 70° 20’ 54” 70° 02’ 39” 69° 48’ 42” 69° 36’ 01” 69° 26’ 24” 69° 28’ 18” 69° 40’ 13” 70° 01’ 31” 70° 30’ 21” 70° 52’ 05” 71° 15’ 22” 71° 24’ 47” 71° 53’ 01” 71° 56’ 37” 71° 27’ 07” 71° 27’ 12” 71° 21’ 10” 71° 10’ 23”	N/A	42° 23’ 06” 42° 25’ 05” 42° 21’ 36” 42° 18’ 28” 42° 13’ 01” 42° 06’ 30” 42° 02’ 54” 42° 08’ 03” 42° 10’ 25” 42° 15’ 39” 42° 22’ 44” 42° 34’ 56” 42° 52’ 26” 43° 13’ 48” 43° 31’ 21” 43° 45’ 21” 43° 59’ 20” 43° 36’ 10” 43° 49’ 27” 43° 27’ 40” 43° 00’ 57” 42° 44’ 40” 42° 51’ 47” 42° 33’ 46” 42° 24’ 24” 42° 23’ 06”	71° 10’ 23” 71° 05’ 43” 71° 00’ 54” 70° 54’ 35” 70° 44’ 53” 70° 41’ 11” 70° 37’ 44” 70° 33’ 35” 70° 20’ 54” 70° 02’ 39” 69° 48’ 42” 69° 36’ 01” 69° 26’ 24” 69° 28’ 18” 69° 40’ 13” 70° 01’ 31” 70° 30’ 21” 70° 52’ 05” 71° 15’ 22” 71° 24’ 47” 71° 53’ 01” 71° 56’ 37” 71° 27’ 07” 71° 27’ 12” 71° 21’ 10” 71° 10’ 23”	N/A

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Moorestown*	NJ	40° 27’ 26” 40° 02’ 54” 39° 48’ 19” 39° 38’ 27” 39° 24’ 59” 39° 17’ 18” 39° 22’ 16” 39° 29’ 35” 39° 54’ 43” 40° 15’ 03” 40° 23’ 29” 40° 42’ 46” 40° 50’ 59” 40° 52’ 49” 40° 47’ 42” 40° 33’ 25” 40° 27’ 26”	75° 42’ 59” 75° 55’ 12” 75° 55’ 55” 75° 51’ 48” 75° 21’ 41” 74° 54’ 9” 74° 27’ 56” 74° 12’ 59” 74° 0’0 05” 74° 06’ 20” 74° 08’ 28” 74° 2’1 54” 74° 31’ 36” 74° 42’ 53” 75° 03’ 00” 75° 28’ 15” 75° 42’ 59”	N/A	40° 27’ 26” 40° 02’ 54” 39° 48’ 19” 39° 38’ 27” 39° 24’ 59” 39° 17’ 18” 39° 22’ 16” 39° 29’ 35” 39° 54’ 43” 40° 15’ 03” 40° 23’ 29” 40° 42’ 46” 40° 50’ 59” 40° 52’ 49” 40° 47’ 42” 40° 33’ 25” 40° 27’ 26”	75° 42’ 59” 75° 55’ 12” 75° 55’ 55” 75° 51’ 48” 75° 21’ 41” 74° 54’ 9” 74° 27’ 56” 74° 12’ 59” 74° 00’ 05” 74° 06’ 20” 74° 08’ 28” 74° 2’1 54” 74° 31’ 36” 74° 42’ 53” 75° 03’ 00” 75° 28’ 15” 75° 42’ 59”	N/A
White Sands Missile Range	NM	34° 35’ 05” 34° 43’ 50” 34° 43’ 17” 34° 26’ 28” 32° 36’ 02” 31° 45’ 47” 31° 18’ 18” 31° 27’ 23” 32° 38’ 49” 33° 32’ 40”	107° 06’ 05” 106° 46’ 50” 106° 03’ 17” 105° 26’ 28” 104° 55’ 02” 105° 22’ 47” 106° 06’ 18” 106° 54’ 23” 107° 25’ 49” 107° 27’ 40”	N/A	34° 35’ 05” 34° 43’ 50” 34° 43’ 17” 34° 26’ 28” 32° 36’ 02” 31° 45’ 47” 31° 18’ 18” 31° 27’ 23” 32° 38’ 49” 33° 32’ 40”	107° 06’ 05” 106° 46’ 50” 106° 03’ 17” 105° 26’ 28” 104° 55’ 02” 105° 22’ 47” 106° 06’ 18” 106° 54’ 23” 107° 25’ 49” 107° 27’ 40”	N/A

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Nevada Test and Training Range	NV	35° 58’ 48” 36° 38’ 22” 36° 22’ 37” 36° 54’ 03” 37° 58’ 01” 38° 59’ 48” 38° 58’ 35” 37° 52’ 34” 36° 20’ 30” 36° 21’ 15”	115° 31’ 55” 116° 23’ 51” 117° 41’ 35” 117° 59’ 18” 118° 01’ 17” 116° 46’ 01” 114° 49’ 25” 113° 35’ 46” 113° 39’ 51” 115° 14’ 23”	N/A	35° 58’ 48” 36° 38’ 22” 36° 22’ 37” 36° 54’ 03” 37° 58’ 01” 38° 59’ 48” 38° 58’ 35” 37° 52’ 34” 36° 20’ 30” 36° 21’ 15”	115° 31’ 55” 116° 23’ 51” 117° 41’ 35” 117° 59’ 18” 118° 01’ 17” 116° 46’ 01” 114° 49’ 25” 113° 35’ 46” 113° 39’ 51” 115° 14’ 23”	N/A
Fort Sill	OK	35° 03’ 39” 35° 10’ 31” 34° 42’ 54” 34° 13’ 49” 34° 13’ 46” 34° 38’ 26”	99° 02’ 38” 98° 05’ 47” 97° 45’ 20” 98° 05’ 49” 98° 56’ 09” 99° 16’ 57”	N/A	35° 03’ 39” 35° 10’ 31” 34° 42’ 54” 34° 13’ 49” 34° 13’ 46” 34° 38’ 26”	99° 02’ 38” 98° 05’ 47” 97° 45’ 20” 98° 05’ 49” 98° 56’ 09” 99° 16’ 57”	N/A
Tobyhanna Army Depot	PA	41° 30’ 25” 41° 38’ 51” 41° 31’ 41” 41° 11’ 31” 40° 52’ 07” 40° 44’ 53” 40° 51’ 43” 41° 07’ 40”	75° 51’ 59” 75° 26’ 33” 75° 01’ 39” 74° 50’ 07” 75° 01’ 02” 75° 23’ 50” 75° 48’ 52” 76° 00’ 38”	N/A	41° 30’ 25” 41° 38’ 51” 41° 31’ 41” 41° 11’ 31” 40° 52’ 07” 40° 44’ 53” 40° 51’ 43” 41° 07’ 40”	75° 51’ 59” 75° 26’ 33” 75° 01’ 39” 74° 50’ 07” 75° 01’0 ” 75° 23’ 50” 75° 48’ 52” 76° 00’ 38”	N/A

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Dahlgren*	VA	38° 23’ 10” 38° 41’ 25” 38° 46’ 14” 38° 49’ 37” 38° 50’ 16” 38° 46’ 30” 38° 49’ 42” 38° 54’ 42” 38° 55’ 37” 38° 56’ 05” 38° 44’ 45” 38° 44’ 22” 38° 35’ 14” 38° 51’ 04” 38° 26’ 52” 38° 22’ 59” 37° 59’ 27” 37° 47’ 08” 37° 54’ 01” 38° 23’ 10”	76° 23’ 21” 76° 35’ 56” 76° 44’ 44” 76° 54’ 57” 76° 58’ 18” 77° 01’ 57” 77° 04’ 08” 77° 07’ 35” 77° 12’ 04” 77° 23’ 05” 77° 25’ 23” 77° 28’ 48” 77° 36’ 11” 78° 12’ 06” 78° 29’ 02” 77° 42’ 19” 77° 28’ 26” 76° 53’ 47” 76° 06’ 14” 76° 23’ 21”	N/A	38° 23’ 10” 38° 41’ 25” 38° 46’ 14” 38° 49’ 37” 38° 50’ 16” 38° 46’ 30” 38° 49’ 42” 38° 54’ 42” 38° 55’ 37” 38° 56’ 05” 38° 44’ 45” 38° 44’ 22” 38° 35’ 14” 38° 51’ 04” 38° 26’ 52” 38° 22’ 59” 37° 59’ 27” 37° 47’ 08” 37° 54’ 01” 38° 23’ 10”	76° 23’ 21” 76° 35’ 56” 76° 44’ 44” 76° 54’ 57” 76° 58’ 18” 77° 01’ 57” 77° 04’ 08” 77° 07’ 35” 77° 12’ 04” 77° 23’ 05” 77° 25’ 23” 77° 28’ 48” 77° 36’ 11” 78° 12’ 06” 78° 29’ 02” 77° 42’ 19” 77° 28’ 26” 76° 53’ 47” 76° 06’ 14” 76° 23’ 21”	N/A
Newport News*	VA	36° 58’ 24”	76° 26’ 07”	93	36° 58’ 24”	76° 26’ 07”	93
Norfolk* (Includes Fort Story SESEF)	VA	36° 56’ 24”	76° 19’ 55”	74	N/A	N/A	N/A
Wallops Island*	VA	37° 51’ 25”	75° 27’ 59”	76	37° 51’ 25”	75° 27’ 59”	76

Location name	State	CPA Latitude	CPA Longitude	CPA Radius (km)	PUA Latitude	PUA Longitude	PUA Radius (km)
Bremerton*	WA	47° 28’ 40” 47° 31’ 16” 47° 31’ 13” 47° 34’ 12” 47° 45’ 36” 47° 59’ 07” 48° 12’ 20” 47° 39’ 46” 47° 39’ 12” 47° 45’ 23” 47° 44’ 48” 47° 57’ 40” 47° 31’ 15” 47° 35’ 53” 47° 27’ 33” 47° 27’ 07” 47° 24’ 25” 47° 23’ 07” 47° 28’ 33” 46° 50’ 25” 46° 53’ 09” 47° 28’ 40”	122° 31’ 22” 122° 31’ 26” 122° 32’ 37” 122° 31’ 52” 121° 32’ 28” 121° 34’ 09” 121° 44’ 51” 122° 29’ 60” 122° 34’ 35” 122° 38’ 09” 122° 45’ 18” 122° 59’ 06” 123° 16’ 23” 122° 49’ 28” 122° 55’ 25” 122° 46’ 16” 122° 42’ 48” 122° 39’ 18” 122° 33’ 44” 121° 49’ 24” 121° 44’ 01” 122° 31’ 22”	N/A	47° 28’ 40” 47° 31’ 16” 47° 31’ 13” 47° 34’ 12” 47° 45’ 36” 47° 59’ 07” 48° 12’ 20” 47° 39’ 46” 47° 39’ 12” 47° 45’ 23” 47° 44’ 48” 47° 57’ 40” 47° 31’ 15” 47° 35’ 53” 47° 27’ 33” 47° 27’ 07” 47° 24’ 25” 47° 23’ 07” 47° 28’ 33” 46° 50’ 25” 46° 53’ 09” 47° 28’ 40”	122° 31’ 22” 122° 31’ 26” 122° 32’ 37” 122° 31’ 52” 121° 32’ 28” 121° 34’ 09” 121° 44’ 51” 122° 29’ 60” 122° 34’ 35” 122° 38’ 09” 122° 45’ 18” 122° 59’ 06” 123° 16’ 23” 122° 49’ 28” 122° 55’ 25” 122° 46’ 16” 122° 42’ 48” 122° 39’ 18” 122° 33’ 44” 121° 49’ 24” 121° 44’ 01” 122° 31’ 22”	N/A
Everett* (Includes Ediz Hook SESEF range)	WA	47° 51’ 11” 47° 25’ 13” 47° 54’ 45” 47° 36’ 60” 47° 51’ 57” 48° 35’ 49” 48° 00’ 08” 47° 51’ 10”	122° 57’ 47” 123° 18’ 06” 122° 10’ 13” 121° 37’ 60” 121° 22’ 57” 122° 08’ 13” 123° 29’ 33” 122° 57’ 47”	N/A	N/A	N/A	N/A