

Technical Paper
2 August 2004

Military Value Attribute “Connectivity” Computation

This paper outlines in detail the methodology used to calculate the Army Basing Study Military Value Attribute “Connectivity” from the raw data, for the purpose of ensuring reproducibility of the values upon later external audit by someone not involved in the methodology development. For a more detailed discussion of the reasoning behind the methodology development, see the original “Connectivity Attribute” development paper.

The Connectivity Attribute values are the weighted average of four characteristics –

(1) Commercial Cellular Service (CCS) - Cellular telephone coverage, with special consideration given to bases currently covered by Global System for Mobile Communications (GSM) service and Wireless Priority Service (WPS) supporting secure cellular communications. Weight 40%.

(2) Commercial Long-Haul Fiber Network Proximity (CLHN) - Proximity and current connectivity to commercial and government CONUS-wide fiber optic networks. Weight 30%.

(3) Risk of military radio frequency spectrum encroachment (RSE) - The more the spectrum was assigned out at an installation, the lower the score. Weight 20%.

(4) Installation Information Infrastructure Modernization Program (I3MP) - Status of the base in the Army’s I3MP. Weight 10%.

Weights reflect the immutability (relative ability for the Army to affect a change) of each characteristic. The raw data was collected in May 2004. The data takes into consideration programs that are underway but not completed at a given base, but not projections of how programmed funds (per the Army Program Objective Memorandum) will be spent, since current Army priorities can be changed.

Commercial Cellular Service (CCS)

The cellular telephone service score was derived from raw data in the Federal Communication Commission’s “Eighth Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services”, dated July 14, 2003. The methodology was modified at the recommendation of the Army Chief Information Officer / G-6 to take into consideration if an installation currently had Global System for Mobile Communications (GSM) service and Wireless Priority Service (WPS) to support secure cell phones such as “Sectera”. The service is provided by a discreet set of vendors and an assessment of coverage is maintained by the Army Telecommunication Directorate of NETCOM’s Enterprise Systems Technology Activity. This certified data is as follows:

Connectivity – Cellular Score

Installation	Cellular		
	Number of Providers (FCC Data)	GSM/WPS	CELLULAR SCORE
Aberdeen PG	6	Y	10
Adelphi Labs	6	Y	10
Anniston AD	7	Y	10
AP Hill	4	N	7
Belvoir	6	Y	10
Benning	7	Y	10
Bliss	6	Y	10
Bluegrass AD	5	Y	10
Bragg	6	Y	10
Buchanan	6	N	7
Campbell	4	Y	10
Carlisle	6	Y	10
Carson	6	Y	10
Charles Kelley Support Activity	6	Y	10
Corpus Christi ADA	6	N	7
Crane AD	2	Y	5
Deseret Chem Plant	2	N	2
Detrick	6	Y	10
Detroit Arsenal	6	Y	10
Dix	6	N	7
Drum	6	N	7
Dugway PG	5	Y	10
Eustis	6	Y	10
Gillem	7	Y	10
Gordon	7	Y	10
Hamilton	6	N	7
Hawthorne AD	2	N	2
Holston AAP	5	N	7
Hood	6	Y	10
Huachuca	3	Y	10
Iowa AAP	3	N	7
Irwin	6	N	7
Jackson	6	Y	10
Kansas AAP	2	N	2
Knox	2	Y	5
Lake City AAP	5	N	7
Leavenworth	5	Y	10
Lee	6	Y	10
Leonard Wood	2	Y	5
Letterkenny AD	4	Y	10
Lewis	7	Y	10

Connectivity – Cellular Score

Lima Tank Plant	3	N	7
Lone Star AAP	4	N	7
Louisiana AAP	5	N	7
McAlester AAP	3	N	7
McCoy	3	N	7
McNair	6	N	7
McPherson	7	Y	10
Meade	6	Y	10
Milan AAP	6	N	7
Mississippi AAP	7	N	7
Monmouth	6	Y	10
Monroe	6	Y	10
MOT Sunny Point	4	Y	10
Myer	6	N	7
Newport Chem Depot	3	N	7
Picatinny Arsenal	6	Y	10
Pine Buff Arsenal	5	Y	10
Polk	3	Y	10
Presidio Of Monterey	5	N	7
Pueblo Chem Depot	6	N	7
Radford AAP	5	N	7
Red River AD	4	N	7
Redstone Arsenal	6	Y	10
Richardson	3	N	7
Riley	4	Y	10
Riverbank AAP	7	N	7
Rock Island Arsenal	6	Y	10
Rucker	6	Y	10
Sam Houston	6	Y	10
Schofield Barracks	5	Y	10
Scranton AAP	4	Y	10
Shafter	5	Y	10
Sierra AD	3	N	7
Sill	3	Y	10
Soldier System Center (Natick)	6	Y	10
Stewart	7	Y	10
Tobyhanna AD	4	N	7
Tooele AD	5	N	7
Tripler AMC	5	Y	10
Umatilla Chem Depot	3	N	7
USAG Selfridge	6	Y	10
Wainwright	2	N	2
Walter Reed AMC	6	Y	10
Watervliet Arsenal	5	Y	10
West Point	6	Y	10
White Sands MR	5	Y	10
Yuma PG	6	N	7

Connectivity – Long-Haul Fiber Score

Commercial Long-Haul Fiber Network Proximity (CLHN)

Electronic maps of six major commercial CONUS fiber networks were obtained, either from the Defense Information Systems Agency (Level 3, AT&T, Broadwing, and Quest) or directly from the vendor (MCI and Sprint). DISA had recently obtained its data from a commercial solicitation. **The data is proprietary to the vendors and is certified to the source.** Each base (ie, post headquarters location) was electronically plotted on the maps along with a surrounding circle fifty miles in radius. Fifty miles is roughly the distance an OC-48 fiber optic signal will transmit without a repeater. If there was access to the fiber network within the circle, the installation was scored a “yes” for that network. Straight-line distance was thus used. Bases with networks that appeared too close to the 50 mile radius circle for a score determination on the CONUS maps were analyzed with detailed small-scaled (Expedia) maps. The maps are on file with the Army CIO/G-6 (SAIS-IOM). The results by base/leased location are as follows:

Base	State	L3	Quest	Brdwg	AT&T	Sprint	MCI	Total
Aberdeen	MD	1	1	1	1	1	1	6
Adelphi	MD	1	1	1	1	1	1	6
Alexandria Hoffman	VA	1	1	1	1	1	1	6
Alexandria JAG/A TEC	VA	1	1	1	1	1	1	6
Anniston	AL	1	1	1	1	1	1	6
Army Res Lab	FL	1	1	1	1	1	1	6
ARPERCEN	MO	1	1	1	1	1	1	6
Bailey's Crossroads	VA	1	1	1	1	1	1	6
Ballston	VA	1	1	1	1	1	1	6
Bluegrass	KY	0	0	0	1	1	0	2
Camp Lejeune	NC	0	0	0	1	0	1	2
<i>Camp Pendleton</i>	CA	1	1	1	1	1	1	6
<i>Cannon AFB</i>	NM	0	0	0	1	0	0	1
Carlisle	PA	1	1	0	1	1	1	5
Corpus Christi	TX	0	0	1	1	1	1	4
Crane	IN	0	1	1	1	1	1	5
Crystal City	VA	1	1	1	1	1	1	6
Deseret	UT	1	1	1	1	1	1	6
Detroit	MI	1	1	1	1	1	1	6
Dugway	UT	1	1	1	0	1	1	5
<i>Eglin AFB</i>	FL	1	1	0	1	1	1	5
<i>Fallon NAS</i>	NV	0	1	0	1	0	1	3
Ft AP Hill	VA	1	1	1	1	1	1	6
Ft Belvoir	VA	1	1	1	1	1	1	6
Ft Benning	GA	0	0	1	1	0	0	2
Ft Bliss	TX	1	1	1	1	1	1	6
Ft Bragg	NC	0	1	0	1	1	1	4
Ft Buchanan	PR	0	0	0	0	0	0	0
Ft Campbell	KY	1	1	0	0	1	1	4
Ft Carson	CO	1	1	1	1	1	1	6

Connectivity – Long-Haul Fiber Score

Ft Detrick	MD	1	1	1	1	1	1	6
Ft Dix	NJ	1	1	1	1	1	1	6
Ft Drum	NY	0	0	0	0	0	0	0
Ft Eustis	VA	0	1	0	1	1	1	4
Ft Gillem	GA	1	1	1	1	1	1	6
Ft Gordon	GA	0	1	0	1	1	1	4
Ft Hamilton	NY	1	1	1	1	1	1	6
Ft Hood	TX	1	1	1	1	1	1	6
Ft Hua	AZ	1	1	0	0	0	1	3
Ft Irwin	CA	1	1	1	0	0	1	4
Ft Jackson	SC	0	1	0	1	1	1	4
Ft Knox	KY	1	1	0	1	1	1	5
Ft Leavenworth	KS	1	1	1	1	1	1	6
Ft Lee	VA	1	1	1	1	1	1	6
Ft Leonard Wd	MO	0	1	1	0	0	1	3
Ft Lewis	WA	1	1	1	1	1	1	6
Ft McCoy	WI	0	0	1	1	1	1	4
Ft McNair	VA	1	1	1	1	1	1	6
Ft McPherson	GA	1	1	1	1	1	1	6
Ft Meade	VA	1	1	1	1	1	1	6
Ft Meyer	VA	1	1	1	1	1	1	6
Ft Monmouth	NJ	1	1	1	1	1	1	6
Ft Monroe	VA	0	1	0	1	1	1	4
Ft Polk	LA	0	1	0	0	1	1	3
Ft Richardson	AK	0	0	0	0	0	0	0
Ft Riley	KS	0	1	1	1	1	1	5
Ft Rucker	AL	1	1	0	1	0	1	4
Ft Sam	TX	1	1	1	1	1	1	6
Ft Shafter	HA	0	0	0	0	0	0	0
Ft Sill	OK	0	1	1	0	0	1	3
Ft Stewart	GA	1	1	0	1	1	1	5
Ft Wainwright	AK	0	0	0	0	0	0	0
Hawthorne	NV	0	0	0	0	0	0	0
Hill AFB	UT	1	1	1	1	1	1	6
Holston	TN	0	1	0	1	1	1	4
Iowa AAP	IA	0	0	0	0	0	1	1
Kansas AAP	KS	0	1	1	1	0	1	4
Kelley	PA	1	1	1	1	1	1	6
Lake City	MO	1	1	1	1	1	1	6
Letterkenny	PA	1	1	0	1	1	1	5
Lima	OH	0	1	1	1	1	1	5
Lone Star	TX	1	0	0	1	0	1	3
Louisiana AAP	LA	0	0	0	1	1	1	3
Luke AFB	AZ	1	1	1	1	1	1	6
McAlester	OK	0	0	0	0	0	0	0
Milan	TN	0	1	0	0	1	1	3
Mississippi AAP	MS	1	1	0	1	1	1	5
Natick	MA	1	1	1	1	1	1	6
Newport	IN	0	1	1	1	1	1	5

Connectivity – Long-Haul Fiber Score

NGIC/JAG	VA	0	1	1	1	1	1	5
PEO STRI	FL	1	1	1	1	1	1	6
Picatinny	NJ	1	1	1	1	1	1	6
Pine Bluff	AR	1	1	0	1	1	1	5
Pres Mont	CA	1	1	1	1	1	1	6
Pueblo	CO	1	1	1	1	1	1	6
Radford	VA	0	0	1	1	1	1	4
Red River	TX	1	0	0	1	0	1	3
Redstone	AL	1	1	0	1	1	1	5
Riverbank	CA	1	1	1	1	1	1	6
Rock Is	IL	0	0	0	1	0	1	2
Schofield	HA	0	0	0	0	0	0	0
Scranton	PA	0	0	0	1	1	1	3
Selfridge	MI	1	1	1	1	1	1	6
Sierra	CA	0	0	0	1	1	1	3
Sunny Pt	NC	0	0	0	1	0	1	2
Tobyhanna	PA	0	0	0	1	1	1	3
Toole	UT	1	1	1	1	1	1	6
Tripler	HA	0	0	0	0	0	0	0
<i>Twenty-nine Palms MCB</i>	CA	0	1	1	1	0	1	4
Umatilla	OR	1	0	0	0	0	1	2
Walter Reed	VA	1	1	1	1	1	1	6
Watervliet	NY	1	1	1	1	1	1	6
West Point	NY	1	1	1	1	1	1	6
White Sands	NM	1	1	1	0	1	1	5
Yuma	AZ	1	1	0	1	0	1	4

The methodology was modified at the recommendation of the Army Chief Information Officer / G-6 to take into consideration if an installation currently had wide area network fiber connectivity in place (DS3 service or better), or was in a short term (two year) program to have fiber connectivity in place. That certified raw data was provided by the Army Telecommunications Directorate of NETCOM’s Enterprise Systems Technology Activity. Using their data in conjunction with the commercial fiber network data, the commercial long-haul proximity score was determined according to the following table:

Fiber optic carriers within 50 miles	Long-Haul Score
0	0
1	5
2 or more	7
Fiber to base in place	10

Connectivity – Long-Haul Fiber Score

The score determined for each base is as follows:

Installation	Fiber In Place	Vendors	Long Haul Score
Aberdeen PG	Y	6	10
Adelphi Labs	N	6	7
Anniston AD	Y	6	10
AP Hill	N	6	7
Belvoir	Y	6	10
Benning	N	2	7
Bliss	N	6	7
Bluegrass AD	N	2	7
Bragg	Y	4	10
Buchanan	N	0	0
Campbell	N	4	7
Carlisle	N	5	7
Carson	N	6	7
Charles Kelley Support Activity	N	6	7
Corpus Christi ADA	N	4	7
Crane AD	N	5	7
Deseret Chem Plant	N	6	7
Detrick	Y	6	10
Detroit Arsenal	N	6	7
Dix	N	6	7
Drum	N	0	0
Dugway PG	N	5	7
Eustis	Y	4	10
Gillem	Y	6	10
Gordon	Y	4	10
Hamilton	N	6	7
Hawthorne AD	N	0	0
Holston AAP	N	4	7
Hood	Y	6	10
Huachuca	Y	3	10
Iowa AAP	N	1	5
Irwin	N	4	7
Jackson	N	4	7
Kansas AAP	N	4	7
Knox	N	5	7
Lake City AAP	N	6	7
Leavenworth	N	6	7
Lee	N	6	7
Leonard Wood	N	3	7
Letterkenny AD	N	5	7
Lewis	Y	6	10
Lima Tank Plant	N	5	7

Connectivity – Long-Haul Fiber Score

Lone Star AAP	N	3	7
Louisiana AAP	N	3	7
McAlester AAP	N	0	0
McCoy	Y	4	10
McNair	N	6	7
McPherson	Y	6	10
Meade	Y	6	10
Milan AAP	N	3	7
Mississippi AAP	N	5	7
Monmouth	Y	6	10
Monroe	N	4	7
MOT Sunny Point	N	1	5
Myer	N	6	7
Newport Chem Depot	N	5	7
Picatinny Arsenal	N	6	7
Pine Buff Arsenal	Y	5	10
Polk	N	3	7
Presidio Of Monterey	N	6	7
Pueblo Chem Depot	N	6	7
Radford AAP	Y	4	10
Red River AD	N	3	7
Redstone Arsenal	Y	5	10
Richardson	N	0	0
Riley	Y	5	10
Riverbank AAP	N	6	7
Rock Island Arsenal	N	2	7
Rucker	N	4	7
Sam Houston	Y	6	10
Schofield Barracks	N	0	0
Scranton AAP	N	3	7
Shafter	N	0	0
Sierra AD	N	3	7
Sill	N	3	7
Soldier System Center (Natick)	Y	6	10
Stewart	N	5	7
Tobyhanna AD	Y	3	10
Tooele AD	N	6	7
Tripler AMC	N	0	0
Umatilla Chem Depot	N	2	7
USAG Selfridge	N	6	7
Wainwright	N	0	0
Walter Reed AMC	N	6	7
Watervliet Arsenal	N	6	7
West Point	N	6	7
White Sands MR	Y	5	10
Yuma PG	N	4	7

Connectivity – Spectrum Encroachment Score

Risk of Spectrum Encroachment (RSE)

The risk of spectrum encroachment was determined by looking for each base at sixty specific widely used military radio frequency bands. Each band is divided into a number of assignable channels; users at a base apply for use of the channels according to local requirements, and the assignments are maintained in the Government Master File of all government assigned frequencies and the Joint Spectrum Center’s Frequency Resource Record System for temporarily assigned frequencies. The percentage of channels assigned out of the total for each band was read off the databases using the software tool Spectrum 21, and the percentage simply averaged over the sixty bands.

An example of the results for one post (Aberdeen Proving Ground) is provided to illustrate the calculation; the raw data for all 88 bases is available.

Band Limits MHz	Channel Bandwidth KHz	Channels Available	Channels Assigned	% Assigned	Comments
.100 - .535	5	217	1	0.46%	NAVAIDS
1.605 - 1.800	5	97	0	0.00%	
1.900 - 3.500	5	320	0	0.00%	
4.000 - 7.000	5	600	0	0.00%	
7.300 - 10.100	5	560	0	0.00%	
10.150 - 14.000	5	770	0	0.00%	
14.350 - 18.068	5	743.6	0	0.00%	
18.168 - 21.000	5	566.4	0	0.00%	
21.450 - 24.890	5	688	0	0.00%	
24.990 - 26.165	5	235	0	0.00%	
26.480 - 26.950	5	94	0	0.00%	
27.540 - 28.000	5	92	0	0.00%	
29.890 -	5	4	0	0.00%	

Connectivity – Spectrum Encroachment Score

29.910 MHz	KHz				
30.000 - 30.560	25	22	2	8.93%	MOTOROLA
32.000 - 33.000	25	40	0	0.00%	
34.000 - 35.000	25	40	0	0.00%	
36.000 - 37.000	25	40	3	7.50%	MOTOROLA
37.500 - 39.000	25	60	1	1.67%	
40.000 - 47.000	25	280	0	0.00%	
49.600 - 50.000	25	16	1	6.25%	
73.000 - 75.400	25	96	1	1.04%	
108.000 - 128.9125	6	3485	2	0.06%	
132.0125 - 136.000	16	249	0	0.00%	
137.000 - 144.000	16	437.5	11	2.51%	LMR
148.000 - 152.855	16	303	26	8.57%	LMR
157.0375 - 157.1875	16	9	0	0.00%	
162.0125 - 173.200	16	699	5	0.72%	LMR
173.400 - 174.000	16	37	6	16.00%	LMR
216.000 - 450.000	600	390	76	19.49%	LMR Includes 600KHz, and 1.2MHz BW
460.000 - 470.000	10	1000	0	0.00%	

Connectivity – Spectrum Encroachment Score

608.000 - 614.000	10	600	0	0.00%	
902.000 - 928.000	10	2600	2	0.08%	
932.000 - 935.000	16	188	0	0.00%	
941.000 - 944.000	16	188	0	0.00%	
960.000 - 1390.000	650	662	1	0.15%	
	MHz				
1395.000 - 1429.500	2.4	14375	0	0.00%	
1435.000 - 1670.000	1.4	167857	0	0.00%	
1675.000 - 1710.000	20	1750	0	0.00%	
1755.000 - 1850.000	15	6333	2	0.03%	MICROWAVE
2025.000 - 2110.000	15	5667	0	0.00%	
2290.000 - 2300.000	15	667	0	0.00%	
2310.000 - 2385.000	15	5000	0	0.00%	
2417.000 - M2450.000	2.4	13750	0	0.00%	
2483.500 - 2500.000	2.4	6875	0	0.00%	
2655.000 - 3650.000	2.4	414583	0	0.00%	
4200.000 - 4940.000	2.4	308333	0	0.00%	
4990.000 - 5925.000	2.4	389583	1	0.00%	
	GHz	MHz			

Connectivity – Spectrum Encroachment Score

7.125.000 - 10.550	1	3425	3	0.09%	MICROWAVE
10.660 - 10.700	3	13	0	0.00%	
13.250 - 14.200	6	158	0	0.00%	
14.400 - 17.700	6	550	1	0.18%	
17.800 - 24.250	6	1075	3	0.28%	MICROWAVE
24.450 - 25.050	6	100	0	0.00%	
25.250 - 27.500	6	375	0	0.00%	
30.000 - 38.600	20	430	0	0.00%	
39.500 - 41.000	20	75	0	0.00%	
42.500 - 47.000	20	225	0	0.00%	
48.200 - 142.000	20	4690	0	0.00%	
144.000 - 248.000	20	5200	0	0.00%	
252.000 - 300.000	20	2400	0	0.00%	
				Average	1.23%

The average for Aberdeen Proving Ground was thus 1.23%. The spectrum score was assigned according to the following matrix.

Connectivity – Spectrum Encroachment Score

Average % Assigned	Spectrum Score
High Risk >7%	2
Med Risk >3% & <7%	6
Low Risk <3%	10

The percentage of spectrum use and resulting score for the 88 bases are thus as follows:

Installation	Average % Assigned	Spectrum Score
Aberdeen PG	1.23%	10
Adelphi Labs	0.42%	10
Anniston AD	0.13%	10
AP Hill	0.02%	10
Belvoir	0.57%	10
Benning	4.52%	6
Bliss	1.97%	10
Bluegrass AD	0.30%	10
Bragg	3.18%	6
Buchanan	1.10%	10
Campbell	1.01%	10
Carlisle	0.22%	10
Carson	0.88%	10
Charles Kelley Support Activity	0.03%	10
Corpus Christi ADA	2.40%	10
Crane AD	0.01%	10
Deseret Chem Plant	0.18%	10
Detrick	0.22%	10
Detroit Arsenal	0.01%	10
Dix	9.61%	2
Drum	4.96%	6
Dugway PG	1.66%	10
Eustis	4.14%	6
Gillem	0.03%	10
Gordon	1.54%	10
Hamilton	0.03%	10
Hawthorne AD	0.19%	10
Holston AAP	0.07%	10
Hood	12.58%	2
Huachuca	2.90%	10
Iowa AAP	0.15%	10

Connectivity – Spectrum Encroachment Score

Irwin	10.24%	2
Jackson	1.00%	10
Kansas AAP	0.76%	10
Knox	1.11%	10
Lake City AAP	0.00%	10
Leavenworth	1.66%	10
Lee	0.95%	10
Leonard Wood	5.80%	6
Letterkenny AD	0.10%	10
Lewis	4.72%	6
Lima Tank Plant	0.05%	10
Lone Star AAP	0.01%	10
Louisiana AAP	0.08%	10
McAlester AAP	0.30%	10
McCoy	0.96%	10
McNair	0.13%	10
McPherson	3.39%	6
Meade	1.26%	10
Milan AAP	0.17%	10
Mississippi AAP	0.61%	10
Monmouth	2.03%	10
Monroe	0.17%	10
MOT Sunny Point	0.01%	10
Myer	0.27%	10
Newport Chem Depot	1.04%	10
Picatinny Arsenal	0.33%	10
Pine Buff Arsenal	0.78%	10
Polk	10.55%	2
Presidio Of Monterey	0.06%	10
Pueblo Chem Depot	1.49%	10
Radford AAP	0.13%	10
Red River AD	0.00%	10
Redstone Arsenal	5.46%	6
Richardson	9.21%	2
Riley	1.28%	10
Riverbank AAP	0.01%	10
Rock Island Arsenal	1.87%	10
Rucker	3.35%	6
Sam Houston	0.42%	10
Schofield Barracks	0.52%	10
Scranton AAP	0.47%	10
Shafter	3.43%	6
Sierra AD	0.47%	10
Sill	3.92%	6
Soldier System Center (Natick)	0.00%	10
Stewart	3.25%	6

Connectivity – Spectrum Encroachment Score

Tobyhanna AD	1.36%	10
Tooele AD	0.18%	10
Tripler AMC	0.06%	10
Umatilla Chem Depot	0.10%	10
USAG Selfridge	1.34%	10
Wainwright	1.23%	10
Walter Reed AMC	0.02%	10
Watervliet Arsenal	0.42%	10
West Point	1.56%	10
White Sands MR	1.23%	10
Yuma PG	4.61%	6

Army Installation Information Infrastructure Modernization Program Status (I3MP)

The status of an installation in the Army Installation Information Infrastructure Modernization Program (I3MP) is maintained at the Information System and Engineering Command office at Fort Detrick, Maryland. The I3MP is an ongoing program to modernize post information infrastructure, and is executed post-by-post according to Army installation sequence lists for each theater (CONUS, Pacific, and Europe). Thus installations can be simply categorized as having had (or are having) the upgrade or not having had the upgrade. In May 2004 that list which served as the certified raw data was as follows. Installations which have had or are currently having the upgrade score 10, those that have not score 0.

Installation	Score
Aberdeen PG	0
Adelphi Labs	0
Anniston AD	10
AP Hill	0
Belvoir	10
Benning	10
Bliss	10
Bluegrass AD	0
Bragg	10
Buchanan	0
Campbell	10
Carlisle	0
Carson	10
Charles Kelley Support Activity	0
Corpus Christi ADA	0
Crane AD	0
Deseret Chem Plant	0
Detrick	10
Detroit Arsenal	10
Dix	10

Connectivity – I3MP Score

Drum	10
Dugway PG	0
Eustis	10
Gillem	10
Gordon	10
Hamilton	0
Hawthorne AD	0
Holston AAP	0
Hood	10
Huachuca	10
Iowa AAP	0
Irwin	10
Jackson	10
Kansas AAP	0
Knox	10
Lake City AAP	0
Leavenworth	0
Lee	10
Leonard Wood	10
Letterkenny AD	0
Lewis	10
Lima Tank Plant	0
Lone Star AAP	0
Louisiana AAP	0
McAlester AAP	0
McCoy	10
McNair	10
McPherson	10
Meade	10
Milan AAP	0
Mississippi AAP	0
Monmouth	10
Monroe	10
MOT Sunny Point	10
Myer	10
Newport Chem Depot	0
Picatinny Arsenal	0
Pine Buff Arsenal	0
Polk	10
Presidio Of Monterey	0
Pueblo Chem Depot	0
Radford AAP	0
Red River AD	0
Redstone Arsenal	10
Richardson	10
Riley	10
Riverbank AAP	0

Connectivity – I3MP Score

Rock Island Arsenal	10
Rucker	10
Sam Houston	10
Schofield Barracks	10
Scranton AAP	0
Shafter	10
Sierra AD	0
Sill	10
Soldier System Center (Natick)	0
Stewart	10
Tobyhanna AD	10
Tooele AD	0
Tripler AMC	0
Umatilla Chem Depot	0
USAG Selfridge	0
Wainwright	10
Walter Reed AMC	0
Watervliet Arsenal	0
West Point	10
White Sands MR	10
Yuma PG	10

Final Connectivity Value Calculation

The final connectivity value was the weighted sum of the four contributing scores according the formula

$$.4 \times \text{CCS} + .3 \times \text{CLHN} + .2 \times \text{RSE} + .1 \times \text{I3MP} = \text{connectivity value.}$$

Installation	CCS Score	CLHN Score	RSE Score	I3MP Score	Connectivity Value
Aberdeen PG	10	10	10	0	9
Adelphi Labs	10	7	10	0	8.1
Anniston AD	10	10	10	10	10
AP Hill	7	7	10	0	6.9
Belvoir	10	10	10	10	10
Benning	10	7	6	10	8.3
Bliss	10	7	10	10	9.1
Bluegrass AD	10	7	10	0	8.1
Bragg	10	10	6	10	9.2
Buchanan	7	0	10	0	4.8
Campbell	10	7	10	10	9.1
Carlisle	10	7	10	0	8.1
Carson	10	7	10	10	9.1
Charles Kelley Support Activity	10	7	10	0	8.1
Corpus Christi ADA	7	7	10	0	6.9
Crane AD	5	7	10	0	6.1
Deseret Chem Plant	2	7	10	0	4.9

Connectivity – Final Value Computation

Detrick	10	10	10	10	10
Detroit Arsenal	10	7	10	10	9.1
Dix	7	7	2	10	6.3
Drum	7	0	6	10	5
Dugway PG	10	7	10	0	8.1
Eustis	10	10	6	10	9.2
Gillem	10	10	10	10	10
Gordon	10	10	10	10	10
Hamilton	7	7	10	0	6.9
Hawthorne AD	2	0	10	0	2.8
Holston AAP	7	7	10	0	6.9
Hood	10	10	2	10	8.4
Huachuca	10	10	10	10	10
Iowa AAP	7	5	10	0	6.3
Irwin	7	7	2	10	6.3
Jackson	10	7	10	10	9.1
Kansas AAP	2	7	10	0	4.9
Knox	5	7	10	10	7.1
Lake City AAP	7	7	10	0	6.9
Leavenworth	10	7	10	0	8.1
Lee	10	7	10	10	9.1
Leonard Wood	5	7	6	10	6.3
Letterkenny AD	10	7	10	0	8.1
Lewis	10	10	6	10	9.2
Lima Tank Plant	7	7	10	0	6.9
Lone Star AAP	7	7	10	0	6.9
Louisiana AAP	7	7	10	0	6.9
McAlester AAP	7	0	10	0	4.8
McCoy	7	10	10	10	8.8
McNair	7	7	10	10	7.9
McPherson	10	10	6	10	9.2
Meade	10	10	10	10	10
Milan AAP	7	7	10	0	6.9
Mississippi AAP	7	7	10	0	6.9
Monmouth	10	10	10	10	10
Monroe	10	7	10	10	9.1
MOT Sunny Point	10	5	10	10	8.5
Myer	7	7	10	10	7.9
Newport Chem Depot	7	7	10	0	6.9
Picatinny Arsenal	10	7	10	0	8.1
Pine Buff Arsenal	10	10	10	0	9
Polk	10	7	2	10	7.5
Presidio Of Monterey	7	7	10	0	6.9
Pueblo Chem Depot	7	7	10	0	6.9
Radford AAP	7	10	10	0	7.8
Red River AD	7	7	10	0	6.9
Redstone Arsenal	10	10	6	10	9.2
Richardson	7	0	2	10	4.2
Riley	10	10	10	10	10
Riverbank AAP	7	7	10	0	6.9
Rock Island Arsenal	10	7	10	10	9.1
Rucker	10	7	6	10	8.3

Connectivity – Final Value Computation

Sam Houston	10	10	10	10	10
Schofield Barracks	10	0	10	10	7
Scranton AAP	10	7	10	0	8.1
Shafter	10	0	6	10	6.2
Sierra AD	7	7	10	0	6.9
Sill	10	7	6	10	8.3
Soldier System Center (Natick)	10	10	10	0	9
Stewart	10	7	6	10	8.3
Tobyhanna AD	7	10	10	10	8.8
Tooele AD	7	7	10	0	6.9
Tripler AMC	10	0	10	0	6
Umatilla Chem Depot	7	7	10	0	6.9
USAG Selfridge	10	7	10	0	8.1
Wainwright	2	0	10	10	3.8
Walter Reed AMC	10	7	10	0	8.1
Watervliet Arsenal	10	7	10	0	8.1
West Point	10	7	10	10	9.1
White Sands MR	10	10	10	10	10
Yuma PG	7	7	6	10	7.1

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