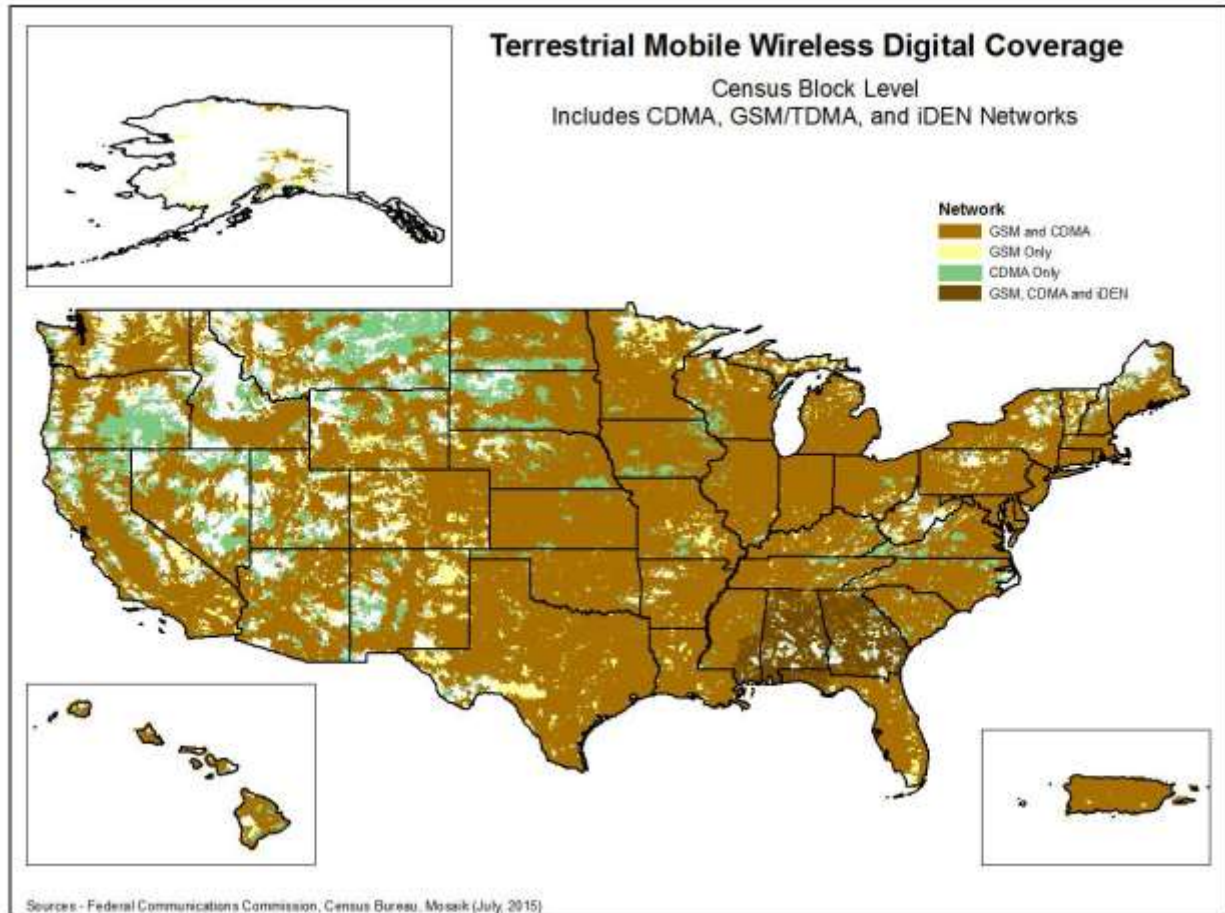


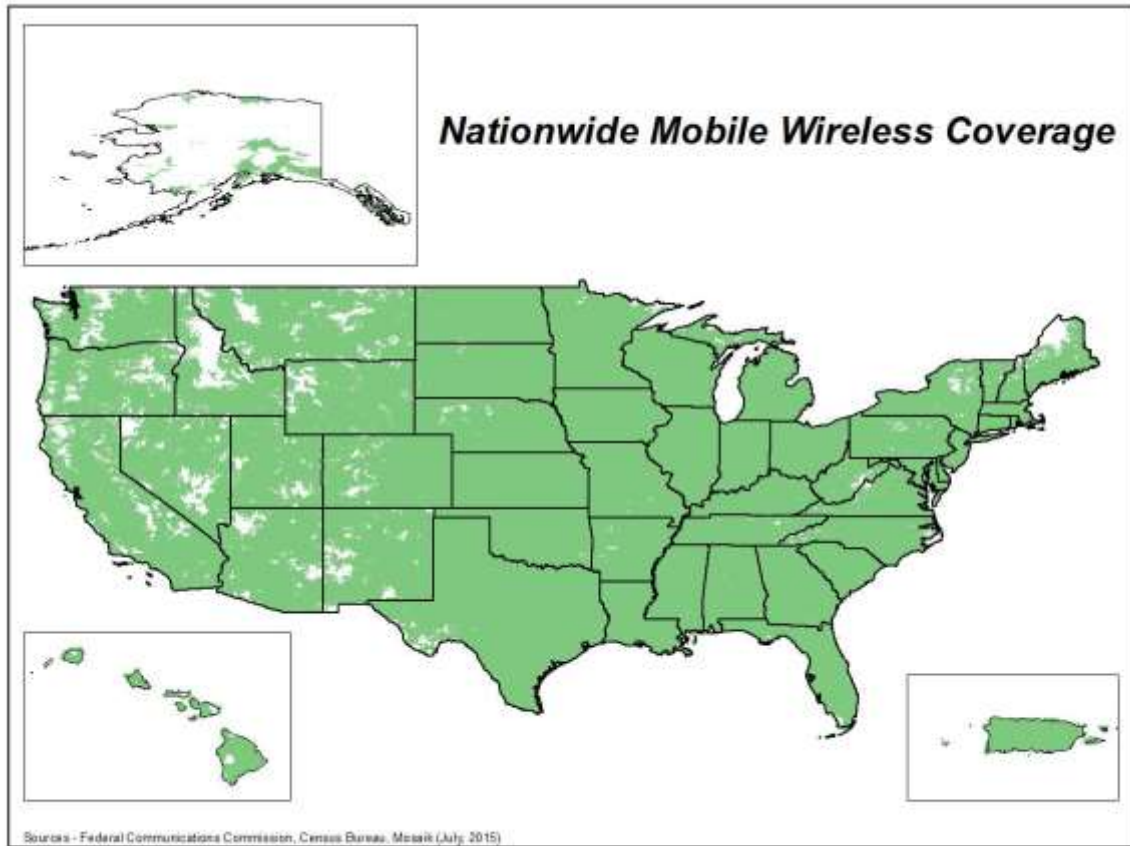
## APPENDIX I: COVERAGE MAPS

Map I: Mobile Wireless Digital Coverage, July 2015



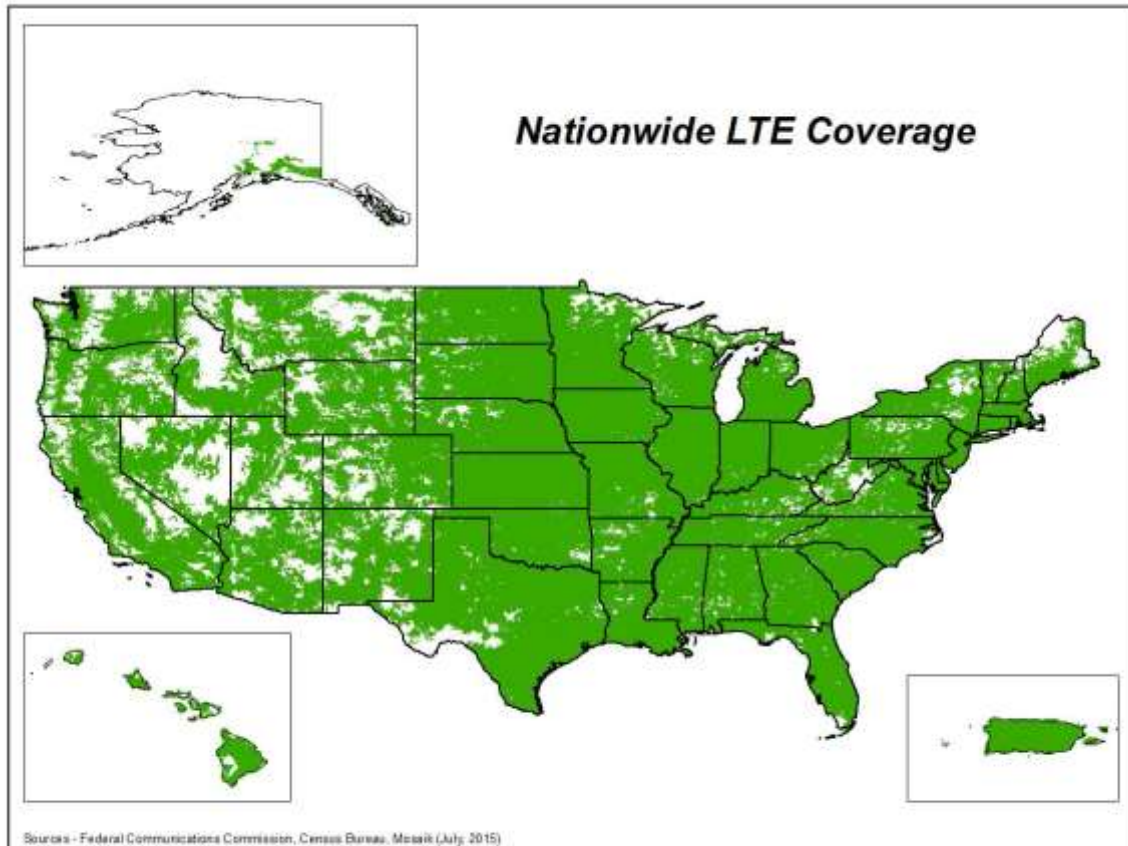
Source: Based on July 2015 Mosaik and 2010 Census data. It is important to note that the number of service providers in a census block represent network coverage only. Network coverage does not necessarily reflect the number of service providers from which any particular individual or household in a given area may choose. Coverage calculations based on Mosaik data, while useful for measuring developments in mobile coverage, have certain limitations that likely result in an overstatement of the extent of mobile coverage.

## Map II: Nationwide Mobile Wireless Coverage, July 2015



Source: Based on July 2015 Mosaik and 2010 Census data. It is important to note that the number of service providers in a census block represent network coverage only. Network coverage does not necessarily reflect the number of service providers from which any particular individual or household in a given area may choose. Coverage calculations based on Mosaik data, while useful for measuring developments in mobile coverage, have certain limitations that likely result in an overstatement of the extent of mobile coverage.

### Map III: Nationwide Mobile LTE Coverage, July 2015



Source: Based on July 2015 Mosaik and 2010 Census data. It is important to note that the number of service providers in a census block represent network coverage only. Network coverage does not necessarily reflect the number of service providers from which any particular individual or household in a given area may choose. Coverage calculations based on Mosaik data, while useful for measuring developments in mobile coverage, have certain limitations that likely result in an overstatement of the extent of mobile coverage.

**APPENDIX II: COMPETITIVE DYNAMICS WITHIN THE INDUSTRY**

**Table II.C.i  
Market Concentration by EA, 2012 – 2014**

2014 Rank	EA	Market Name	Population	HHI		
				2012	2013	2014
1	142	Scottsbluff, NE-WY	91,571	6,606	6,689	7,312
2	116	Sioux Falls, SD-IA-MN-NE	558,647	6,150	6,297	6,448
3	144	Billings, MT-WY	452,040	6,417	6,557	6,442
4	145	Great Falls, MT	164,985	6,571	6,414	6,430
5	121	North Platte, NE-CO	61,592	*	*	6,020
6	111	Minot, ND	116,439	5,933	6,033	6,018
7	112	Bismarck, ND-MT-SD	186,962	5,963	*	5,897
8	115	Rapid City, SD-MT-ND-NE	230,086	5,643	5,894	5,890
9	110	Grand Forks, ND-MN	222,571	5,672	5,948	5,742
10	113	Fargo-Moorhead, ND-MN	400,274	5,458	5,624	5,610
11	143	Casper, WY-ID-UT	467,797	5,708	5,611	5,479
12	119	Lincoln, NE	410,339	5,076	5,348	5,445
13	117	Sioux City, IA-NE-SD	252,009	4,589	5,051	5,433
14	14	Salisbury, MD-DE-VA	419,355	5,122	5,293	5,191
15	56	Toledo, OH	1,279,418	4,770	5,005	5,170
16	36	Dothan, AL-FL-GA	358,396	4,508	4,861	5,084
17	45	Johnson City-Kingsport-Bristol, TN-VA	609,299	4,403	4,807	4,994
18	95	Jonesboro, AR-MO	311,312	4,583	4,909	4,925
19	42	Asheville, NC	512,200	4,497	4,763	4,874
20	149	Twin Falls, ID	185,790	4,444	4,997	4,837
21	85	Lafayette, LA	638,768	4,795	4,915	4,783
22	4	Burlington, VT-NY	625,288	4,658	4,700	4,720
23	171	Anchorage, AK	710,231	4,083	3,863	4,692
24	38	Macon, GA	844,429	4,136	4,661	4,692
25	37	Albany, GA	496,206	3,821	4,522	4,669
26	109	Duluth-Superior, MN-WI	354,182	4,587	4,567	4,665
27	148	Idaho Falls, ID-WY	365,056	4,432	4,782	4,582
28	72	Paducah, KY-IL	230,924	4,931	4,616	4,539
29	7	Rochester, NY-PA	1,509,579	4,373	4,508	4,521
30	105	La Crosse, WI-MN	257,376	4,131	4,310	4,473
31	55	Cleveland-Akron, OH-PA	4,583,408	4,104	4,404	4,470
32	139	Santa Fe, NM	274,264	4,520	4,409	4,387
33	154	Flagstaff, AZ-UT	474,774	4,203	4,434	4,370
34	52	Wheeling, WV-OH	312,837	4,203	4,335	4,324
35	39	Columbus, GA-AL	532,508	3,643	4,145	4,324

2014 Rank	EA	Market Name	Population	HHI		
				2012	2013	2014
36	54	Erie, PA	513,834	4,161	4,352	4,301
37	92	Fayetteville-Springdale-Rogers, AR-MO-OK	527,374	4,306	4,407	4,285
38	90	Little Rock-North Little Rock, AR	1,719,570	3,823	4,241	4,261
39	106	Rochester, MN-IA-WI	341,710	3,882	4,085	4,218
40	69	Evansville-Henderson, IN-KY-IL	878,433	4,061	4,237	4,192
41	6	Syracuse, NY-PA	1,922,300	4,044	4,185	4,184
42	9	State College, PA	808,730	4,132	4,187	4,183
43	89	Monroe, LA	338,416	3,723	3,973	4,152
44	35	Tallahassee, FL-GA	801,642	3,657	4,046	4,143
45	43	Chattanooga, TN-GA	797,154	3,851	4,124	4,111
46	118	Omaha, NE-IA-MO	1,130,768	3,641	3,969	4,074
47	91	Fort Smith, AR-OK	356,101	3,842	4,201	4,053
48	75	Tupelo, MS-AL-TN	633,772	4,346	4,097	4,016
49	51	Columbus, OH	2,594,734	3,520	3,893	3,967
50	101	Peoria-Pekin, IL	534,159	3,552	3,697	3,958
51	84	Baton Rouge, LA-MS	835,783	4,232	4,166	3,953
52	68	Champaign-Urbana, IL	644,865	3,710	3,839	3,948
53	28	Savannah, GA-SC	796,055	2,925	3,671	3,946
54	98	Columbia, MO	406,350	3,912	3,955	3,903
55	1	Bangor, ME	543,767	3,852	3,944	3,901
56	97	Springfield, IL-MO	520,982	3,914	3,851	3,865
57	147	Spokane, WA-ID	932,290	3,620	3,841	3,853
58	27	Augusta-Aiken, GA-SC	658,679	3,410	3,762	3,838
59	41	Greenville-Spartanburg-Anderson, SC-NC	1,392,816	3,426	3,739	3,804
60	48	Charleston, WV-KY-OH	1,191,822	3,626	3,749	3,793
61	74	Huntsville, AL-TN	1,105,409	3,441	3,743	3,784
62	79	Montgomery, AL	507,613	3,496	3,725	3,774
63	86	Lake Charles, LA	555,838	3,728	4,070	3,754
64	165	Redding, CA-OR	361,652	3,405	3,621	3,748
65	8	Buffalo-Niagara Falls, NY-PA	1,460,584	3,303	3,586	3,731
66	94	Springfield, MO	987,431	3,600	3,565	3,669
67	46	Hickory-Morganton, NC-TN	558,291	3,001	3,447	3,668
68	5	Albany-Schenectady-Troy, NY	1,222,542	3,518	3,617	3,662
69	135	Odessa-Midland, TX	426,631	3,526	3,560	3,655
70	168	Pendleton, OR-WA	209,568	3,397	3,542	3,653
71	24	Columbia, SC	1,059,254	3,166	3,471	3,649
72	50	Dayton-Springfield, OH	1,122,314	2,774	3,291	3,615
73	26	Charleston-North Charleston, SC	703,499	3,152	3,430	3,565
74	66	Fort Wayne, IN	748,680	3,471	3,601	3,561
75	87	Beaumont-Port Arthur, TX	460,666	3,469	3,692	3,557

2014 Rank	EA	Market Name	Population	HHI		
				2012	2013	2014
76	162	Fresno, CA	1,676,476	2,989	3,787	3,556
77	53	Pittsburgh, PA-WV	2,912,497	3,310	3,587	3,546
78	150	Boise City, ID-OR	728,993	3,273	3,527	3,522
79	23	Charlotte-Gastonia-Rock Hill, NC-SC	2,546,100	3,120	3,440	3,516
80	49	Cincinnati-Hamilton, OH-KY-IN	2,315,121	2,543	2,870	3,512
81	47	Lexington, KY-TN-VA-WV	1,936,486	3,342	3,467	3,505
82	136	Hobbs, NM-TX	209,606	3,207	2,957	3,494
83	128	Abilene, TX	225,538	3,635	3,499	3,475
84	15	Richmond-Petersburg, VA	1,636,548	3,362	3,467	3,473
85	88	Shreveport-Bossier City, LA-AR	591,759	3,456	3,612	3,458
86	25	Wilmington, NC-SC	1,054,975	3,044	3,296	3,449
87	11	Harrisburg-Lebanon-Carlisle, PA	1,244,058	3,406	3,362	3,350
88	132	Corpus Christi, TX	571,987	2,411	3,412	3,342
89	151	Reno, NV-CA	786,501	3,175	3,474	3,321
90	2	Portland, ME	784,594	3,057	3,260	3,315
91	100	Des Moines, IA-IL-MO	1,755,021	3,081	3,252	3,310
92	155	Farmington, NM-CO	221,760	3,191	3,232	3,285
93	57	Detroit-Ann Arbor-Flint, MI	6,827,726	2,902	3,193	3,265
94	125	Oklahoma City, OK	1,882,087	2,825	3,316	3,263
95	62	Grand Rapids-Muskegon-Holland, MI	1,962,250	3,142	3,217	3,251
96	65	Elkhart-Goshen, IN-MI	954,029	3,158	3,287	3,247
97	22	Fayetteville, NC	571,898	2,947	3,245	3,245
98	19	Raleigh-Durham-Chapel Hill, NC	2,307,548	2,949	3,174	3,233
99	140	Pueblo, CO-NM	291,784	3,317	3,436	3,226
100	67	Indianapolis, IN-IL	3,335,590	3,163	3,247	3,208
101	81	Pensacola, FL	684,856	3,054	3,109	3,179
102	104	Madison, WI-IA-IL	1,019,465	3,281	3,224	3,178
103	18	Greensboro-Winston-Salem-High Point, NC-VA	2,037,966	2,781	3,080	3,169
104	44	Knoxville, TN	1,106,120	2,815	3,135	3,167
105	156	Albuquerque, NM-AZ	1,078,891	3,032	3,216	3,165
106	126	Western Oklahoma, OK	142,644	2,861	3,132	3,147
107	134	San Antonio, TX	2,650,971	2,444	3,276	3,143
108	78	Birmingham, AL	1,692,233	3,042	3,129	3,126
109	124	Tulsa, OK-KS	1,478,165	2,635	3,184	3,113
110	93	Joplin, MO-KS-OK	280,505	3,252	3,083	3,110
111	102	Davenport-Moline-Rock Island, IA-IL	559,935	2,819	3,000	3,084
112	80	Mobile, AL	724,956	3,149	3,067	3,068
113	96	St. Louis, MO-IL	3,690,263	2,782	3,083	3,056
114	71	Nashville, TN-KY	2,856,296	2,645	3,016	3,048
115	158	Phoenix-Mesa, AZ-NM	4,351,644	2,813	3,080	3,044

2014 Rank	EA	Market Name	Population	HHI		
				2012	2013	2014
116	20	Norfolk-Virginia Beach-Newport News, VA-NC	1,835,870	2,882	3,063	3,030
117	122	Wichita, KS-OK	1,210,018	2,826	2,868	3,022
118	167	Portland-Salem, OR-WA	3,311,677	2,771	3,036	3,018
119	130	Austin-San Marcos, TX	1,830,206	2,754	3,100	3,012
120	123	Topeka, KS	476,322	2,882	2,967	3,001
121	3	Boston-Worcester-Lawrence-Lowewell-Brockton, MA-NH	8,228,930	2,843	2,967	3,001
122	159	Tucson, AZ	1,159,029	2,779	3,070	2,989
123	77	Jackson, MS-AL-LA	1,484,806	3,079	3,016	2,965
124	73	Memphis, TN-AR-MS-KY	2,001,223	2,585	3,010	2,960
125	163	San Francisco-Oakland-San Jose, CA	9,759,108	2,742	2,899	2,949
126	164	Sacramento-Yolo, CA	2,722,415	2,741	2,882	2,948
127	107	Minneapolis-St. Paul, MN-WI-IA	4,895,391	2,832	2,898	2,941
128	76	Greenville, MS	214,872	3,150	3,075	2,923
129	166	Eugene-Springfield, OR-CA	859,318	2,704	2,886	2,913
130	21	Greenville, NC	930,805	2,669	2,833	2,907
131	103	Cedar Rapids, IA	426,881	2,666	2,817	2,889
132	141	Denver-Boulder-Greeley, CO-KS-NE	4,685,203	2,533	2,869	2,876
133	83	New Orleans, LA-MS	1,622,143	3,175	2,976	2,860
134	13	Washington-Baltimore, DC-MD-VA-WV-PA	9,515,921	2,735	2,891	2,849
135	170	Seattle-Tacoma-Bremerton, WA	4,686,669	2,778	2,816	2,849
136	40	Atlanta, GA-AL-NC	6,690,595	2,602	2,778	2,846
137	33	Sarasota-Bradenton, FL	897,121	2,639	2,771	2,846
138	12	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	7,735,541	2,612	2,831	2,839
139	161	San Diego, CA	3,095,313	2,637	2,913	2,806
140	31	Miami-Fort Lauderdale, FL	6,291,880	2,292	2,839	2,802
141	70	Louisville, KY-IN	1,558,777	2,549	2,846	2,796
142	127	Dallas-Fort Worth, TX-AR-OK	9,092,705	2,681	2,829	2,787
143	60	Appleton-Oshkosh-Neenah, WI	469,566	2,488	2,602	2,767
144	133	McAllen-Edinburg-Mission, TX	1,264,091	2,533	2,899	2,754
145	169	Richland-Kennewick-Pasco, WA	797,338	2,761	2,729	2,753
146	157	El Paso, TX-NM	1,112,036	2,349	2,717	2,751
147	138	Amarillo, TX-NM	511,635	2,774	2,685	2,736
148	29	Jacksonville, FL-GA	2,217,013	2,461	2,695	2,729
149	10	New York-North New Jersey-Long Island, NY-NJ-CT-PA	26,663,330	2,591	2,702	2,717
150	16	Staunton, VA-WV	360,886	2,726	2,755	2,712
151	34	Tampa-St. Petersburg-Clearwater, FL	2,783,243	2,262	2,632	2,703
152	152	Salt Lake City-Ogden, UT-ID	2,558,128	2,476	2,685	2,701
153	32	Fort Myers-Cape Coral, FL	940,274	2,433	2,595	2,688
154	172	Honolulu, HI	1,360,301	2,528	2,559	2,654
155	131	Houston-Galveston-Brazoria, TX	6,949,709	2,357	2,687	2,653

2014 Rank	EA	Market Name	Population	HHI		
				2012	2013	2014
156	137	Lubbock, TX	406,628	2,704	2,629	2,635
157	160	Los Angeles-Riverside-Orange County, CA-AZ	19,800,937	2,437	2,634	2,627
158	59	Green Bay, WI-MI	687,392	2,515	2,545	2,601
159	30	Orlando, FL	4,562,642	2,401	2,578	2,593
160	153	Las Vegas, NV-AZ-UT	2,403,936	2,211	2,557	2,544
161	17	Roanoke, VA-NC-WV	882,328	2,387	2,510	2,536
162	99	Kansas City, MO-KS	2,693,265	2,388	2,553	2,535
163	64	Chicago-Gary-Kenosha, IL-IN-WI	10,758,118	2,180	2,360	2,503
164	108	Wausau, WI	494,992	2,008	2,474	2,411
165	129	San Angelo, TX	212,086	2,078	2,317	2,373
166	82	Biloxi-Gulfport-Pascagoula, MS	411,066	2,501	2,473	2,361
167	63	Milwaukee-Racine, WI	2,343,622	2,143	2,237	2,219
	120	Grand Island, NE (see note 1)	287,927	*	*	*
	58	Northern Michigan, MI	265,125	*	*	*
	61	Traverse City, MI	303,041	*	*	*
	114	Aberdeen, SD	79,541	*	*	*
	146	Missoula, MT	447,771	*	*	*

Source: Based on NRUF and 2010 census data, EAs as defined in 1995.

Note 1: There is a discrepancy in the data for this EA, thus, the subscriber data and the HHI are unreliable.

\* Data withheld to maintain firm confidentiality.



## APPENDIX III: OVERALL WIRELESS INDUSTRY METRICS

### Overall Connections and Customers

**Table III.B.i**  
**EA Penetration Rates: 2012-2014**

2014 Rank	EA	Market Name	Penetration Rate		
			2012	2013	2014
1	122	Wichita, KS-OK	109%	127%	151%
2	57	Detroit-Ann Arbor-Flint, MI	128%	137%	150%
3	55	Cleveland-Akron, OH-PA	121%	130%	141%
4	51	Columbus, OH	111%	120%	126%
5	135	Odessa-Midland, TX	110%	114%	122%
6	111	Minot, ND	113%	113%	121%
7	50	Dayton-Springfield, OH	106%	112%	121%
8	83	New Orleans, LA-MS	118%	116%	121%
9	10	New York-North New Jersey-Long Island, NY-NJ-CT-PA	111%	115%	119%
10	85	Lafayette, LA	113%	114%	119%
11	142	Scottsbluff, NE-WY	98%	98%	119%
12	84	Baton Rouge, LA-MS	111%	111%	118%
13	20	Norfolk-Virginia Beach-Newport News, VA-NC	111%	115%	118%
14	13	Washington-Baltimore, DC-MD-VA-WV-PA	117%	114%	117%
15	155	Farmington, NM-CO	110%	111%	117%
16	87	Beaumont-Port Arthur, TX	108%	111%	117%
17	3	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH	107%	110%	117%
18	89	Monroe, LA	123%	115%	116%
19	99	Kansas City, MO-KS	104%	109%	116%
20	88	Shreveport-Bossier City, LA-AR	112%	108%	115%
21	64	Chicago-Gary-Kenosha, IL-IN-WI	108%	114%	115%
22	90	Little Rock-North Little Rock, AR	117%	113%	115%
23	44	Knoxville, TN	108%	109%	114%
24	40	Atlanta, GA-AL-NC	109%	111%	114%
25	34	Tampa-St. Petersburg-Clearwater, FL	104%	107%	113%
26	86	Lake Charles, LA	109%	106%	113%
27	17	Roanoke, VA-NC-WV	110%	110%	113%
28	22	Fayetteville, NC	110%	107%	113%
29	73	Memphis, TN-AR-MS-KY	107%	109%	113%
30	12	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	106%	109%	113%
31	79	Montgomery, AL	106%	108%	112%
32	97	Springfield, IL-MO	108%	109%	112%
33	131	Houston-Galveston-Brazoria, TX	104%	106%	112%

2014 Rank	EA	Market Name	Penetration Rate		
			2012	2013	2014
34	127	Dallas-Fort Worth, TX-AR-OK	103%	106%	112%
35	132	Corpus Christi, TX	103%	106%	111%
36	49	Cincinnati-Hamilton, OH-KY-IN	112%	114%	111%
37	161	San Diego, CA	103%	105%	111%
38	159	Tucson, AZ	97%	102%	111%
39	56	Toledo, OH	102%	105%	111%
40	8	Buffalo-Niagara Falls, NY-PA	101%	104%	111%
41	172	Honolulu, HI	102%	106%	111%
42	71	Nashville, TN-KY	111%	108%	111%
43	37	Albany, GA	104%	106%	111%
44	78	Birmingham, AL	107%	107%	111%
45	124	Tulsa, OK-KS	118%	108%	110%
46	31	Miami-Fort Lauderdale, FL	108%	112%	110%
47	15	Richmond-Petersburg, VA	106%	107%	110%
48	93	Joplin, MO-KS-OK	104%	106%	110%
49	141	Denver-Boulder-Greeley, CO-KS-NE	103%	105%	110%
50	80	Mobile, AL	105%	106%	110%
51	160	Los Angeles-Riverside-Orange County, CA-AZ	100%	102%	109%
52	107	Minneapolis-St. Paul, MN-WI-IA	102%	105%	109%
53	53	Pittsburgh, PA-WV	103%	105%	109%
54	29	Jacksonville, FL-GA	102%	105%	109%
55	70	Louisville, KY-IN	101%	104%	109%
56	125	Oklahoma City, OK	115%	106%	109%
57	69	Evansville-Henderson, IN-KY-IL	99%	105%	109%
58	81	Pensacola, FL	104%	106%	108%
59	128	Abilene, TX	98%	102%	108%
60	163	San Francisco-Oakland-San Jose, CA	101%	104%	108%
61	77	Jackson, MS-AL-LA	103%	106%	108%
62	96	St. Louis, MO-IL	105%	105%	108%
63	170	Seattle-Tacoma-Bremerton, WA	103%	104%	108%
64	116	Sioux Falls, SD-IA-MN-NE	93%	94%	108%
65	101	Peoria-Pekin, IL	98%	100%	108%
66	27	Augusta-Aiken, GA-SC	104%	104%	108%
67	63	Milwaukee-Racine, WI	99%	104%	108%
68	45	Johnson City-Kingsport-Bristol, TN-VA	103%	102%	107%
69	74	Huntsville, AL-TN	106%	104%	107%
70	38	Macon, GA	105%	105%	107%
71	171	Anchorage, AK	98%	109%	107%
72	91	Fort Smith, AR-OK	99%	96%	107%
73	153	Las Vegas, NV-AZ-UT	101%	104%	107%

2014 Rank	EA	Market Name	Penetration Rate		
			2012	2013	2014
74	134	San Antonio, TX	99%	103%	107%
75	82	Biloxi-Gulfport-Pascagoula, MS	105%	105%	106%
76	152	Salt Lake City-Ogden, UT-ID	101%	105%	106%
77	23	Charlotte-Gastonia-Rock Hill, NC-SC	101%	102%	106%
78	35	Tallahassee, FL-GA	100%	102%	105%
79	5	Albany-Schenectady-Troy, NY	100%	101%	105%
80	137	Lubbock, TX	96%	99%	104%
81	143	Casper, WY-ID-UT	98%	100%	104%
82	24	Columbia, SC	100%	104%	104%
83	133	McAllen-Edinburg-Mission, TX	97%	99%	104%
84	30	Orlando, FL	97%	100%	104%
85	67	Indianapolis, IN-IL	98%	100%	104%
86	130	Austin-San Marcos, TX	96%	99%	104%
87	158	Phoenix-Mesa, AZ-NM	95%	98%	104%
88	16	Staunton, VA-WV	99%	100%	104%
89	28	Savannah, GA-SC	97%	98%	103%
90	41	Greenville-Spartanburg-Anderson, SC-NC	100%	103%	103%
91	121	North Platte, NE-CO	*	*	103%
92	157	El Paso, TX-NM	92%	95%	103%
93	18	Greensboro-Winston-Salem-High Point, NC-VA	101%	101%	103%
94	7	Rochester, NY-PA	97%	99%	103%
95	94	Springfield, MO	90%	96%	103%
96	43	Chattanooga, TN-GA	99%	99%	103%
97	102	Davenport-Moline-Rock Island, IA-IL	98%	99%	103%
98	42	Asheville, NC	98%	99%	102%
99	95	Jonesboro, AR-MO	105%	100%	102%
100	148	Idaho Falls, ID-WY	95%	95%	102%
101	72	Paducah, KY-IL	93%	98%	102%
102	39	Columbus, GA-AL	100%	97%	102%
103	75	Tupelo, MS-AL-TN	97%	99%	101%
104	9	State College, PA	96%	98%	101%
105	167	Portland-Salem, OR-WA	95%	98%	101%
106	138	Amarillo, TX-NM	93%	98%	101%
107	6	Syracuse, NY-PA	96%	98%	101%
108	129	San Angelo, TX	94%	98%	101%
109	103	Cedar Rapids, IA	100%	99%	101%
110	144	Billings, MT-WY	93%	96%	101%
111	151	Reno, NV-CA	92%	96%	101%
112	112	Bismarck, ND-MT-SD	94%	*	101%
113	2	Portland, ME	98%	100%	101%

2014 Rank	EA	Market Name	Penetration Rate		
			2012	2013	2014
114	106	Rochester, MN-IA-WI	95%	97%	101%
115	154	Flagstaff, AZ-UT	97%	99%	101%
116	48	Charleston, WV-KY-OH	99%	97%	100%
117	126	Western Oklahoma, OK	102%	94%	100%
118	66	Fort Wayne, IN	95%	97%	100%
119	25	Wilmington, NC-SC	96%	98%	100%
120	140	Pueblo, CO-NM	89%	93%	100%
121	100	Des Moines, IA-IL-MO	96%	96%	100%
122	59	Green Bay, WI-MI	94%	97%	99%
123	62	Grand Rapids-Muskegon-Holland, MI	93%	97%	99%
124	118	Omaha, NE-IA-MO	95%	96%	99%
125	76	Greenville, MS	97%	97%	99%
126	166	Eugene-Springfield, OR-CA	92%	95%	99%
127	109	Duluth-Superior, MN-WI	93%	97%	99%
128	19	Raleigh-Durham-Chapel Hill, NC	96%	96%	99%
129	119	Lincoln, NE	93%	96%	99%
130	36	Dothan, AL-FL-GA	93%	97%	99%
131	156	Albuquerque, NM-AZ	93%	95%	99%
132	136	Hobbs, NM-TX	85%	101%	99%
133	139	Santa Fe, NM	94%	95%	99%
134	147	Spokane, WA-ID	92%	94%	99%
135	149	Twin Falls, ID	92%	92%	99%
136	164	Sacramento-Yolo, CA	92%	96%	99%
137	4	Burlington, VT-NY	92%	95%	98%
138	52	Wheeling, WV-OH	95%	95%	98%
139	110	Grand Forks, ND-MN	93%	94%	98%
140	169	Richland-Kennewick-Pasco, WA	92%	94%	98%
141	26	Charleston-North Charleston, SC	98%	98%	98%
142	11	Harrisburg-Lebanon-Carlisle, PA	93%	96%	98%
143	113	Fargo-Moorhead, ND-MN	90%	92%	98%
144	98	Columbia, MO	95%	95%	97%
145	165	Redding, CA-OR	90%	93%	97%
146	54	Erie, PA	90%	92%	96%
147	123	Topeka, KS	90%	93%	96%
148	65	Elkhart-Goshen, IN-MI	90%	93%	96%
149	33	Sarasota-Bradenton, FL	90%	92%	96%
150	117	Sioux City, IA-NE-SD	91%	92%	95%
151	150	Boise City, ID-OR	89%	92%	95%
152	115	Rapid City, SD-MT-ND-NE	90%	87%	95%
153	60	Appleton-Oshkosh-Neenah, WI	90%	92%	95%

2014 Rank	EA	Market Name	Penetration Rate		
			2012	2013	2014
154	68	Champaign-Urbana, IL	92%	93%	95%
155	32	Fort Myers-Cape Coral, FL	91%	93%	95%
156	162	Fresno, CA	84%	87%	94%
157	1	Bangor, ME	93%	92%	94%
158	104	Madison, WI-IA-IL	90%	91%	94%
159	21	Greenville, NC	90%	90%	93%
160	47	Lexington, KY-TN-VA-WV	88%	90%	93%
161	14	Salisbury, MD-DE-VA	90%	89%	92%
162	145	Great Falls, MT	88%	90%	92%
163	46	Hickory-Morganton, NC-TN	90%	89%	90%
164	168	Pendleton, OR-WA	83%	86%	90%
165	105	La Crosse, WI-MN	84%	85%	89%
166	92	Fayetteville-Springdale-Rogers, AR-MO-OK	88%	86%	88%
167	108	Wausau, WI	92%	92%	87%
	120	Grand Island, NE (see note 1)	*	*	*
	58	Northern Michigan, MI	*	*	*
	61	Traverse City, MI	*	*	*
	114	Aberdeen, SD	*	*	*
	146	Missoula, MT	*	*	*

Note 1: The data for Grand Island, NE, are unreliable, and are therefore not reported.

**APPENDIX IV  
LIST OF ABBREVIATIONS AND ACRONYMS**

2G	Second Generation
3G	Third Generation
4G	Fourth Generation
ARPU	Average Revenue Per User
AWS	Advanced Wireless Service
BLS	Bureau of Labor Statistics
BRS	Broadband Radio Service
CFR	Code of Federal Regulations
CAPEX	Capital Expenditures
CDC	Centers for Disease Control
CDMA	Code Division Multiple Access
CEO	Chief Executive Officer
CMA	Cellular Market Area
CMRS	Commercial Mobile Radio Services
CPI	Consumer Price Index
DA	Delegated Authority
DAS	Distributed Antenna System
DOJ	Department of Justice
DSL	Digital Subscriber Line
EA	Economic Area
EBIT	Earnings before Interest and Taxes
EBITDA	Earnings before Interest, Taxes, Debt, and Amortization
EBS	Educational Broadband Service
EDGE	Enhanced Data Rates for Global Evolution
EHA	Exclusive Handset Agreement
ETF	Early Termination Fee
EV-DO	Evolution Data Optimized
FCC	Federal Communications Commission
FDD	Frequency Division Duplex
FNPRM	Further Notice of Proposed Rulemaking
FSS	Frequency Spread Spectrum
FTC	Federal Trade Commission
GAO	Government Accountability Office
GB	Gigabyte
GHz	Gigahertz
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communication
HHI	Herfindahl-Hirschman Index
HSPA	High Speed Packet Access
HTML	HyperText Markup Language
HTTP	Hypertext Transfer Protocol
IB	International Bureau
iDEN	Integrated Digital Enhanced Network
ILEC	Independent Local Exchange Carrier
ITIF	Information Technology & Innovation Foundation
ITU	International Telecommunication Union
kbps	Kilobits per Second
LEC	Local Exchange Carrier
LLC	Limited Liability Corporation
LNP	Local Number Portability
LTE	Long Term Evolution
M2M	Machine-to-Machine

MB	Megabyte
Mbps	Megabits per Second
MHz	Megahertz
MIMO	Multiple Input Multiple Output
MMS	Multimedia Messaging Service
MOUs	Minutes of use (average minutes of use per subscriber per month)
MSA	Metropolitan Statistical Area
MSS	Mobile Satellite Service
MTA	Major Trading Area
MVNO	Mobile Virtual Network Operator
NCHS	National Center for Health Statistics
NFC	Near-Field Communication
NHIS	National Health Interview Survey
NIST	National Institute of Standards and Technology
NOI	Notice of Inquiry
NPA-NXX	the first six digits of a ten-digit telephone number
NPAC	Number Portability Administration Center
NPRM	Notice of Proposed Rulemaking
NRUF	Numbering Report / Utilization Forecast
NTCA	National Telecommunications Cooperative Association
NTIA	National Telecommunications and Information Administration
OBI	Omnibus Broadband Initiative
OET	Office of Engineering & Technology
OS	Operating System
PC	Personal Computer
PCS	Personal Communications System
PN	Public Notice
PSTN	Public Switched Telephone Network
PUC	Public Utility Commission
R&D	Research and Development
R&O	Report and Order
RF	Radio Frequency
RPM	Revenue per Minute
RSA	Rural Service Area
SEC	Security and Exchange Commission
SIM	Subscriber Identity Module
SMR	Specialized Mobile Radio
SMS	Short Message Service
TB	Terabyte
TDD	Time Division Duplex
TDM	Time Division Multiplexing
TDMA	Time Division Multiple Access
ULS	Universal Licensing System
UMTS	Universal Mobile Telecommunications System
US	United States
USB	Universal Serial Bus
USF	Universal Service Fund
VoIP	Voice over Internet Protocol
WCDMA	Wideband Code Division Multiple Access
WCS	Wireless Communications Service
WiMAX	Worldwide Interoperability for Microwave Access
WLAN	Wireless Local Area Network
WTB	Wireless Telecommunications Bureau