

ORIGINAL	
N.H.P.U.C. Case No.	DT 07-027
Exhibit No.	10
Witness	Panel <sup>3</sup>
DO NOT REMOVE FROM FILE	

**STATE OF NEW HAMPSHIRE  
BEFORE THE  
PUBLIC UTILITIES COMMISSION  
DOCKET NO. DT 07-027**

**Kearsarge Telephone Company, Wilton Telephone  
Company, Hollis Telephone Company, and Merrimack  
County Telephone Company Petition for an Alternate  
Form of Regulation**

**Testimony of  
Josie A. M. Gage  
On Behalf of  
Staff  
October 12, 2007**

1 **Q. Please state your name, occupation, and business address.**

2 A. My name is Josie Gage. I am employed by the New Hampshire Public Utilities  
3 Commission (Commission) as a Utility Analyst III in the Telecommunications  
4 Division. My business address is 21 S. Fruit St., Suite 10, Concord, New Hampshire,  
5 03301. I have a bachelor's degree from Lasell College in Auburndale, MA in  
6 Business Administration and a Master of Business Administration degree from  
7 Simmons School of Management in Boston, MA. Previous to my work at the  
8 Commission, I worked in the field of finance including as a registered representative  
9 with A.G. Edwards, also as an analyst with the Massachusetts IOLTA Committee.

10 **Q. What is the purpose of your testimony?**

11 A. The purpose of my testimony is to examine the wireline, broadband or wireless  
12 availability in each exchange in Hollis Telephone Company (HTC), Kearsarge  
13 Telephone Company (KTC), Merrimack County Telephone Company (MCTC) and  
14 Wilton Telephone Company (WTC).

15 **Q. How did you conduct your analysis?**

16 A. I began my analysis by examining information provided by TDS. TDS provided  
17 exchange boundary maps which depicted cable television coverage areas and  
18 demonstrated where broadband cable modem service is available. The maps also  
19 depicted where TDS DSL is available.  
20 The maps provided by TDS in their original data responses, and a second set provided  
21 in their follow up data responses, were unclear. After inspecting the revised set of  
22 maps, Staff had questions of TDS with regard to clarity of the maps and their keys.  
23 Through questions asked during the October 1, 2007 technical session it was found

1 that the maps had been prepared with incorrect keys, and that some of the information  
2 depicted on the maps was incorrect. A telephone call from Public Utilities  
3 Commission counsel to a Salisbury selectman informed us that the indications on the  
4 Salisbury exchange map of cable TV availability was overstated. Ultimately, Staff  
5 found it increasingly difficult to rely on the information provided by TDS on their  
6 exchange maps.

7 Despite these errors, I found that HTC, having only one exchange, had cable modem  
8 and cable TV coverage for the majority of the population from Charter  
9 Communications Entertainment LLC. On that basis I determined alternative  
10 broadband service was available for the majority of customers in Hollis. I found the  
11 same was true for WTC, also having only one exchange, which appears to have the  
12 majority of its population served by Comcast.

13 In analyzing KTC I looked at the maps provided by TDS and found that among the  
14 six exchanges; Andover, Boscawen, Chichester, Meriden, New London, and  
15 Salisbury, each of them, with the exception of Salisbury appeared to have broadband  
16 or cable TV service for the majority of the population.

17 MCTC's exchanges include Antrim, Bradford, Contoocook, Henniker, Hillsboro,  
18 Melvin Village, Sutton, and Warner. Again, it appeared that each of them has  
19 broadband or cable TV service available to the majority of the populations there.

20 After I had reviewed the maps TDS provided, I proceeded with further analysis of the  
21 Sutton, Salisbury, Wilton and Hollis exchanges, one exchange from each company,  
22 with regard to wireless telephone service.

1 **Q. Why did you choose only one exchange in the MCTC areas and one exchange in**  
2 **the KTC areas to review?**

3 A. The statute requires availability of a competitive wireline, wireless, or broadband  
4 service to a majority of retail customers in each of the exchanges served by the ILEC.  
5 Salisbury is an exchange served by KTC and Sutton is an exchange served by MCTC.  
6 If the required services are not available to the majority of customers in one of the  
7 company's exchanges, the statutory requirement is not satisfied. Based on my initial  
8 review, Salisbury and Sutton appeared to be the least well covered, so I began to  
9 analyze, more precisely, how available wireline, wireless, or broadband services were  
10 in those exchanges.

11 **Q. Who is the broadband provider in the Sutton exchange?**

12 A. TDS Telecom is the provider of broadband in the Sutton exchange. TDS provides  
13 DSL in Sutton, but only in conjunction with basic service. Since customers are  
14 required to purchase basic service from TDS in order to buy TDS DSL, TDS DSL  
15 does not compete with basic local service.

16 **Q. Who are the Cable TV providers in the Sutton exchange and do they provide**  
17 **broadband service?**

18 A. The Sutton exchange includes the towns of Sutton, Newbury, and Wilmot.  
19 • In the town of Sutton, the Cable TV provider, as registered with the FCC, is MCT  
20 Communications, Inc. a subsidiary of TDS. [Please Refer to Exhibit 2 for a list of  
21 TDS subsidiaries and affiliated companies from TDS' most recent 10(K) filing

1 with the SEC.] The town of Sutton represents 94.8%<sup>1</sup> of TDS' customers in the  
2 Sutton exchange. MCT Communications does not offer a cable modem service.

3 • In the town of Newbury, the Cable TV provider, as registered with the FCC, is  
4 MCT Communications, Inc. This represents 0.6% of TDS' customers in the  
5 Sutton exchange. MCT Communications does not offer a cable modem service.

6 • In the town of Wilmot, the Cable TV provider, as registered with the FCC, is  
7 Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/  
8 North Carolina/ Virginia/Vermont, LLC. This represents 0.5% of TDS' customers  
9 in the Sutton exchange. Comcast offers a broadband cable modem service.

10 **Q. Who is the broadband provider in the Salisbury exchange?**

11 A. TDS Telecom is the provider of broadband in the Salisbury exchange. As with Sutton,  
12 TDS provides DSL in Salisbury, but only in conjunction with basic service. Since  
13 customers are required to purchase basic service from TDS in order to buy TDS DSL,  
14 TDS DSL does not compete with basic local service.

15 **Q. Who are the Cable TV providers in the Salisbury exchange and do they provide**  
16 **broadband service?**

17 A. The Salisbury exchange includes the towns of Salisbury, Webster, Boscawen, and  
18 Andover.

19 • In the town of Salisbury, the Cable TV provider, as registered with the FCC, is  
20 Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/  
21 North Carolina/ Virginia/Vermont, LLC. However, no cable TV provider actually  
22 serves the town currently with the exception of the first eight residences in

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<sup>1</sup> See TDS' follow up data response to Staff 2-20 for the data used in this calculation.

1 Salisbury on Raccoon Hill Road beginning from the Andover/Salisbury town line  
2 which are served from Andover by Comcast. In total the town of Salisbury (less  
3 the 8 residents served) represents 71.4% of TDS' customers in the Salisbury  
4 exchange.

- 5 • In the town of Webster, no cable TV provider is registered with the FCC. A list of  
6 franchise areas provided to Staff by Comcast indicates that the town of Webster is  
7 not served by Comcast. This represents 27.2% of TDS' customers in the Salisbury  
8 exchange.

- 9 • In the town of Boscawen, the Cable TV provider, as registered with the FCC, is  
10 Comcast of Maine/New Hampshire. This represents 0.0% (the number is too  
11 small to be represented by one decimal point) of TDS' customers in the Salisbury  
12 exchange.

- 13 • In the town of Andover, the Cable TV provider, as registered with the FCC, is  
14 Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/  
15 North Carolina/ Virginia/Vermont, LLC. This represents 0.0% (the number is too  
16 small to be represented by one decimal point) of TDS' customers in the Salisbury  
17 exchange.

18 **Q. Please summarize your analysis of broadband availability in the Sutton and**  
19 **Salisbury exchanges.**

- 20 A. The majority of customers in Salisbury do not have cable TV or cable modem service.  
21 The majority of customers in the Sutton exchange have cable TV available from  
22 MCT Communications which does not offer cable modem service. The only  
23 broadband available to customers in these exchanges is TDS DSL which, as stated

1 above, I have discounted from my analysis. Accordingly, I have found no evidence of  
2 a competitive broadband alternative in either exchange.

3 **Q. Is wireline service available from a provider other than TDS in the TDS**  
4 **exchanges?**

5 A. No. The Commission has not authorized wireline CLECs to serve in any franchise  
6 other than Verizon's.

7 **Q. How did you analyze wireless service availability?**

8 A. TDS did not provide any specific evidence as to the availability of wireless service by  
9 exchange. Staff undertook its own analysis to determine the extent to which service is  
10 available to the majority of customers in the Sutton and Salisbury exchanges.

11 **Q. What does the term dBm stand for and how is it used?**

12 A. The term, "dBm" stands for decibels per milliwatt. According to Engineering and  
13 Operations in the Bell System edited by R.F. Rey in 1983, "The unit dBm is a  
14 logarithmic measure of power with respect to a reference power of 1 milliwatt." It is  
15 used to measure the strength or weakness of a signal emitting from a cell site antenna.

16 **Q. Why is this relevant?**

17 A. Although there are wireless providers who will use alternative measuring  
18 conventions, dBm is the fundamental (scientific) measurement representing the  
19 strength or weakness of the cellular telephone signal. This measurement can be  
20 utilized in determining the availability or lack of wireless signal anywhere a user goes  
21 with a cellular telephone.

22 **Q. What is the range of dBm at which a cellular telephone signal exists?**

1 A. Cellular telephone signal begins at its very strongest at -50dBm, which is received  
2 when standing right under a tower with a cellular antenna belonging to the user's  
3 provider on top. A user would literally need to be able to reach out and touch the  
4 tower in order to get -50dBm. At -110dBm, cellular telephone signal exists, but is so  
5 weak it is unusable.

6 It is important to remember that cellular signal strength works its way down a  
7 negative list of numbers (from strong to weak).

8 **Q. What is Staff's understanding of the functionality of a cell phone at varying**  
9 **dBm?**

10 A. From various phone calls and email messages Staff has found that views of signal  
11 strength and what that means in terms of quality varies based on who is asked. For  
12 example, a telephone call to Wilson Electronics, Inc., a manufacturer of cellular  
13 handset antennae produced the following scale:

- 14 • -50dBm "crystal clear" connection
- 15 • -90dBm "a decent call" (but not necessarily a clear one)
- 16 • -110dBm gets you "nothing" or "no connection"

17 Email communications with the ConnectME Authority, Maine's state eligible  
18 telecommunications carrier program, revealed the following qualifications for them:

- 19 • In determining areas that qualify as **underserved**, a map depicting -85dBm  
20 must be filed with the Authority. The Authority considers any signal outside  
21 of, or weaker than -85dBm **underserved**.

- 1           • In determining areas that qualify as **unserved**, a map of -95dBm must be filed  
2           with the Authority. The Authority considers any signal outside of, or weaker  
3           than -95dBm **unserved**.

4           Finally, Staff has found through communications with wireless providers themselves  
5           that some coverage maps, which they use to market their services to the public, are  
6           based on varying signal strengths. On information and belief wireless providers use  
7           -85dBm to depict their strongest signal coverage. Exhibit 3, page 25 shows that  
8           AT&T's "Best" coverage is, "...sufficient for most in-building coverage." It further  
9           indicates, "However, in-building coverage can and will be adversely affected by the  
10          thickness/construction type of walls, or your location in the building (i.e., in the  
11          basement, in the middle of the building with multiple walls, etc.)". Their "Good"  
12          coverage is, "not great in buildings", and their "Moderate" coverage drops when the  
13          user is driving. It is also important to remember while looking at an AT&T coverage  
14          map that partner coverage is equal to their "Moderate" coverage.

15          Using these standards, Maine's ConnectME Authority would consider anything less  
16          than "best" coverage **underserved**.

17       **Q. Please provide examples of wireless providers' own definitions of what their**  
18       **maps depict.**

19       A. Please refer to Exhibit 3 for examples of wireless providers' own definitions of what  
20       is depicted on their coverage maps, and coverage map examples for both Sutton and  
21       Salisbury exchanges. Many coverage maps include out of network coverage, which is  
22       not reliably known by that provider to be dependable. Note that a telephone call  
23       between Staff and Sprint/Nextel defined areas in dark green with white dots as areas

1 where, “signal strength information is unavailable” as shown in Exhibit 3 on pages 41  
2 and 47. Sprint did not previously provide an explanation in their coverage map key  
3 for any area that was dark green with white dots.

4 **Q. How reliable, in terms of quality of service, and guarantee of reliable cellular**  
5 **telephone signal strength are providers’ coverage maps, or online coverage**  
6 **locators?**

7 A. Wireless providers’ coverage maps are quite unreliable. A wireless provider wants to  
8 display to a potential customer the extent to which they could receive a reliable signal  
9 in an area, rather than a guarantee that they will receive a reliable signal strength.  
10 Also, signal strengths are not defined on these maps. The coverage locator maps are  
11 meant to be marketing tools, not a guarantee from the provider on service availability.  
12 Staff has found that the provider’s coverage maps depict outdoor coverage in all  
13 cases, which does not necessarily represent adequate signal strength inside buildings.  
14 Exhibit 3, pages 23, 25, 26, 29, 38, 53, and 57 are web page printouts of wireless  
15 coverage in the Sutton and Salisbury exchanges as advertised by providers. Wireless  
16 providers admit readily that obstructions such as those in Exhibit 1 (trees, exterior  
17 walls, interior walls, basements, discussed below) are likely to break down signal  
18 availability, suggesting that the wireless coverage depicted is not necessarily adequate  
19 or reliable for in home use.

20 **Q. How far does the average cellular telephone signal project from a wireless**  
21 **antenna?**

22 A. Well positioned, adequate equipment will make the difference between why one  
23 signal is stronger than another, but on average Staff finds that signal propagates in

1 ranges from 2-5 miles in rural areas. The actual reach of the signal will depend on the  
2 positioning (or “pointing”) of the equipment as well as physical terrain and  
3 obstructions.

4 Research on aggregate penetration loss changes the picture significantly. Greg  
5 Durgin, Theodore S. Rappaport, and Hao Xu, of The Mobile and Portable Radio  
6 Research Group at Virginia Polytechnic Institute in Blacksburg Virginia, completed  
7 research testing the same type of system as many of the systems here in NH. A  
8 summary of the list of common obstacles along with the resulting loss of signal from  
9 their paper, *Radio Path Loss and Penetration Loss Measurements in and around*  
10 *Homes and Trees at 5.85GHz*, 1998, is provided in Exhibit 1. This list is not inclusive  
11 of how the mountainous terrain of NH would erode a cellular signal.

12 **Q. Please show where cellular telephone antennae are located in and around the**  
13 **Sutton exchange.**

14 A. Exhibit 4 is a map of all known cellular telephone antennae with a 5 mile radius line  
15 drawn around them in and around the Sutton exchange. The radius line is meant as a  
16 visual guide. Techniques such as pointing the antennae, and obstructions such as  
17 foothills or mountains, etc... were not calculated into the five mile radius lines. Based  
18 on my research, I believe that this is the farthest distance a signal could propagate in  
19 rural areas and in fact, it is likely that the actual signal does not reach that far in these  
20 areas.

21 **Q. Please show where cellular telephone antennae are located in and around the**  
22 **Salisbury exchange.**

1 A. Refer to Exhibit 5 for a map of the cellular telephone antennae with a 5 mile radius  
2 line around them in and around the Salisbury exchange. As in Exhibit 4, the radius  
3 line is meant as a visual guide. Techniques such as pointing the antennae, and  
4 obstructions such as foothills or mountains, etc... were not calculated into the five  
5 mile radius lines.

6 **Q. Given Staff's analysis of wireless services in the Sutton and Salisbury exchanges,**  
7 **what is the estimated availability of cellular signal in either exchange?**

8 A. In the Sutton exchange Staff finds that the availability of wireless signal is restricted  
9 mainly to the outdoors by lack of adequate cell sites. While the existing cell sites for  
10 Nextel and possibly Verizon serve the Interstate 89 corridor, cellular telephone  
11 service is not available to the rest of the exchange population in a manner comparable  
12 with wireline service. There is no evidence that wireless service would be reliable in  
13 the case of an emergency, especially indoors. It should be noted that U.S. Cellular has  
14 the best available coverage in the Sutton exchange, but it is by no means available  
15 reliably through the obstructions listed in Exhibit 1, of which there are many in  
16 Sutton.

17 In the Salisbury exchange Staff finds that the availability of wireless signal is  
18 restricted all but completely to the outdoors, and is unreliable even then. The chance  
19 to receive a cell phone signal in the Salisbury exchange is dependant upon wireless  
20 providers' attempts to serve Interstate 93, not the Salisbury exchange.

21 Again, Staff emphasizes that antennae and their signal can and will be directed  
22 toward a specific target. Providers' antennae are wisely "pointed" up and down  
23 interstate highways so as to capture the most users, not into these rural exchanges.

1 Staff found no evidence that wireless service is available to the majority of customers  
2 in the Salisbury exchange.

3 **Q. Please explain cellular telephone conditions in the Wilton and Hollis exchanges.**

4 A. Based on the number of antennae in the Wilton and Hollis exchanges, it is likely that  
5 wireless providers cover the majority of the population in these exchanges with  
6 reasonable cellular telephone signal coverage.

7 **Q. Would you please summarize your testimony?**

8 A. Hollis and Wilton exchanges appear to have wireless and broadband service available  
9 to the majority of customers in the exchanges. Staff witness Dr. Chattopadhyay  
10 analyzes in his testimony, whether the service is competitive or not.

11 My analysis of the Sutton and Salisbury exchanges revealed no availability of  
12 wireline, wireless, or broadband alternatives which are not provided by TDS itself.

13 **Q. Does this conclude your testimony?**

14 A. Yes, it does.

**Exhibit 1** – A summary of common obstacles measured at the Portable Radio Research Group at Virginia Polytechnic Institute in Blacksburg, Virginia:

<b>Shadowing Element</b>	<b>Loss</b>
Brick house exterior	14.5 dB
Wood siding exterior	8.8 dB
Cinderblock wall	22 dB
Subterranean basement loss	31 dB
Interior wall	4.7 dB
Small deciduous tree	3.5 dB
Large deciduous tree	11 dB
Large coniferous tree	14 dB

**TELEPHONE AND DATA SYSTEMS, INC.**  
**SUBSIDIARY AND AFFILIATED COMPANIES**  
**December 31, 2006**

**STATE OF**  
**INCORPORATION**

**U.S. CELLULAR**

UNITED STATES CELLULAR CORPORATION	DELAWARE
BANGOR CELLULAR TELEPHONE, LP	Partnership
BARAT WIRELESS, LP	Partnership
CALIFORNIA RURAL SERVICE AREA #1, INC.	CALIFORNIA
CARROLL WIRELESS, LP	Partnership
CEDAR RAPIDS CELLULAR TELEPHONE, L.P.	Partnership
CELLVEST, INC.	DELAWARE
CENTRAL CELLULAR TELEPHONES LTD	ILLINOIS
CHAMPLAIN CELLULAR, INC	NEW YORK
CHARLOTTESVILLE CELLULAR PARTNERSHIP	Partnership
COMMUNITY CELLULAR TELEPHONE COMPANY	TEXAS
CROWN POINT CELLULAR INC.	NEW YORK
DAVENPORT CELLULAR TELEPHONE COMPANY	Partnership
DAVENPORT CELLULAR TELEPHONE COMPANY, INC.	DELAWARE
DUBUQUE CELLULAR TELEPHONE, L.P.	Partnership
EASTERN NORTH CAROLINA CELLULAR JOINT VENTURE	Partnership
GRAY BUTTE JOINT VENTURE	Partnership
GREEN BAY CELLTELCO	Partnership
HARDY CELLULAR TELEPHONE COMPANY	DELAWARE
HUMPHREY COUNTY CELLULAR, INC.	DELAWARE
INDIANA RSA # 5, INC.	INDIANA
INDIANA RSA NO. 4 LIMITED PARTNERSHIP	Partnership
INDIANA RSA NO. 5 LIMITED PARTNERSHIP	Partnership
IOWA 13, INC.	DELAWARE
IOWA RSA # 12, INC.	DELAWARE
IOWA RSA # 3, INC.	DELAWARE
IOWA RSA # 9, INC.	DELAWARE
JACKSON SQUARE PCS, INC.	DELAWARE
JACKSON SQUARE WIRELESS, L.P.	Partnership
JACKSONVILLE CELLULAR PARTNERSHIP	Partnership
JACKSONVILLE CELLULAR TELEPHONE COMPANY	NORTH CAROLINA
KANSAS # 15 LIMITED PARTNERSHIP	Partnership
KENOSHA CELLULAR TELEPHONE, L.P.	Partnership
LACROSSE CELLULAR TELEPHONE COMPANY, INC.	DELAWARE
LEWISTON CELLTELCO PARTNERSHIP	Partnership
MADISON CELLULAR TELEPHONE COMPANY	Partnership
MAINE RSA # 1, INC.	MAINE
MAINE RSA # 4, INC.	MAINE
MANCHESTER-NASHUA CELLULAR TELEPHONE, L.P.	Partnership
MCDANIEL CELLULAR TELEPHONE COMPANY	DELAWARE
MINNESOTA INVCO OF RSA # 7, INC.	DELAWARE
N.H. #1 RURAL CELLULAR, INC.	NEW HAMPSHIRE
NEW YORK RSA 2 CELLULAR PARTNERSHIP	Partnership
NEWPORT CELLULAR, INC.	NEW YORK
NORTH CAROLINA RSA # 4, INC.	DELAWARE
NORTH CAROLINA RSA 1 PARTNERSHIP	Partnership
NORTH CAROLINA RSA NO. 6, INC.	CALIFORNIA
OREGON RSA # 2, INC.	OREGON
OREGON RSA NO. 2 LIMITED PARTNERSHIP	Partnership
PCS WISCONSIN, LLC	WISCONSIN
RACINE CELLULAR TELEPHONE COMPANY	Partnership
ST. LAWRENCE SEAWAY RSA CELLULAR PARTNERSHIP	Partnership
TENNESSEE RSA # 3, LIMITED PARTNERSHIP	Partnership
TEXAHOMA CELLULAR LIMITED PARTNERSHIP	Partnership
TEXAS INVCO OF RSA # 6, INC.	DELAWARE
TOWNSHIP CELLULAR TELEPHONE, INC.	DELAWARE

\* 50% or more owned comanies

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**EXHIBIT 2**  
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**TELEPHONE AND DATA SYSTEMS, INC.  
SUBSIDIARY AND AFFILIATED COMPANIES  
December 31, 2006**

	<u>STATE OF INCORPORATION</u>
UNITED STATES CELLULAR INVESTMENT CO. OF OKLAHOMA CITY, INC.	OKLAHOMA
UNITED STATES CELLULAR INVESTMENT COMPANY, LLC	DELAWARE
UNITED STATES CELLULAR INVESTMENT CORPORATION OF LOS ANGELES	INDIANA
UNITED STATES CELLULAR OPERATING COMPANY OF TULSA, INC.	OKLAHOMA
UNITED STATES CELLULAR OPERATING COMPANY LLC	DELAWARE
UNITED STATES CELLULAR OPERATING COMPANY OF BANGOR	MAINE
UNITED STATES CELLULAR OPERATING COMPANY OF CEDAR RAPIDS	DELAWARE
UNITED STATES CELLULAR OPERATING COMPANY OF CHICAGO, LLC	DELAWARE
UNITED STATES CELLULAR OPERATING COMPANY OF DUBUQUE	IOWA
UNITED STATES CELLULAR OPERATING COMPANY OF KNOXVILLE	TENNESSEE
UNITED STATES CELLULAR OPERATING COMPANY OF LACROSSE, INC.	WISCONSIN
UNITED STATES CELLULAR OPERATING COMPANY OF LEWISTON-AUBURN	MAINE
UNITED STATES CELLULAR OPERATING COMPANY OF MANCHESTER-NASHUA, INC.	NEW HAMPSHIRE
UNITED STATES CELLULAR OPERATING COMPANY OF MEDFORD	OREGON
UNITED STATES CELLULAR OPERATING COMPANY OF WATERLOO	IOWA
UNITED STATES CELLULAR OPERATING COMPANY OF YAKIMA	WASHINGTON
UNITED STATES CELLULAR TELEPHONE COMPANY (GREATER KNOXVILLE), LP	Partnership
UNITED STATES CELLULAR TELEPHONE OF GREATER TULSA, L.L.C.	OKLAHOMA
USCC AUCTION 66, LLC	DELAWARE
USCC DISTRIBUTION CO., LLC	DELAWARE
USCC FINANCIAL L.L.C.	ILLINOIS
USCC PAYROLL CORPORATION	DELAWARE
USCC PURCHASE, LLC	DELAWARE
USCC REAL ESTATE CORPORATION	DELAWARE
USCC WIRELESS INVESTMENT, INC.	DELAWARE
USCCI CORPORATION	DELAWARE
USCIC OF AMARILLO, INC.	DELAWARE
USCIC OF FRESNO, INC.	CALIFORNIA
USCIC OF NORTH CAROLINA RSA # 1, INC.	DELAWARE
USCIC OF PENNSYLVANIA 5, INC.	DELAWARE
USCOC OF CENTRAL ILLINOIS, LLC	ILLINOIS
USCOC OF CHARLOTTESVILLE, INC.	VIRGINIA
USCOC OF CHICAGO REAL ESTATE HOLDINGS, LLC	DELAWARE
USCOC OF CUMBERLAND, INC.	MARYLAND
USCOC OF GREATER IOWA, INC	PENNSYLVANIA
USCOC OF GREATER MISSOURI, LLC	DELAWARE
USCOC OF GREATER OKLAHOMA, INC.	OKLAHOMA
USCOC OF NEBRASKA/KANSAS, INC	DELAWARE
USCOC OF NEBRASKA/KANSAS, LLC	DELAWARE
USCOC OF ILLINOIS RSA # 1, LLC	ILLINOIS
USCOC OF ILLINOIS RSA # 4, LLC	ILLINOIS
USCOC OF IOWA RSA # 1, INC.	IOWA
USCOC OF IOWA RSA # 16, INC.	DELAWARE
USCOC OF JACKSONVILLE, INC.	NORTH CAROLINA
USCOC OF JACK-WIL, INC.	DELAWARE
USCOC OF NEW HAMPSHIRE RSA # 2, INC.	DELAWARE
USCOC OF NORTH CAROLINA RSA # 7, INC.	NORTH CAROLINA
USCOC OF OREGON RSA # 5, INC.	DELAWARE
USCOC OF PENNSYLVANIA RSA NO. 10-B2, INC.	DELAWARE
USCOC OF RICHLAND, INC.	WASHINGTON
USCOC OF ROCHESTER, INC.	DELAWARE
USCOC OF ROCKFORD, LLC	ILLINOIS
USCOC OF SOUTH CAROLINA RSA # 4, INC.	SOUTH CAROLINA
USCOC OF TEXAHOMA, INC.	TEXAS
USCOC OF VIRGINIA RSA # 2, INC.	VIRGINIA
USCOC OF VIRGINIA RSA # 3, INC.	VIRGINIA
USCOC OF WASHINGTON-4, INC.	DELAWARE

USCOC OF WILMINGTON, INC.  
VERMONT RSA NO. 2-B2, INC.  
VICTORIA CELLULAR CORPORATION  
VIRGINIA RSA # 4, INC.

NORTH CAROLINA  
DELAWARE  
TEXAS  
VIRGINIA

\* 50% or more owned comanies

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**TELEPHONE AND DATA SYSTEMS, INC.  
SUBSIDIARY AND AFFILIATED COMPANIES  
December 31, 2006**

**STATE OF  
INCORPORATION**

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VIRGINIA RSA # 7, INC.  
WASHINGTON RSA # 5, INC.  
WATERLOO / CEDAR FALLS CELLTELCO PARTNERSHIP  
WESTELCOM CELLULAR, INC.  
WESTERN SUB-RSA LIMITED PARTNERSHIP  
WILMINGTON CELLULAR PARTNERSHIP  
WILMINGTON CELLULAR TELEPHONE COMPANY  
YAKIMA MSA LIMITED PARTNERSHIP

VIRGINIA  
WASHINGTON  
Partnership  
NEW YORK  
Partnership  
Partnership  
NORTH CAROLINA  
Partnership

**TDS TELECOMMUNICATIONS**

TDS TELECOMMUNICATIONS CORPORATION

DELAWARE

**INCUMBENT LOCAL EXCHANGE COMPANIES**

AMELIA TELEPHONE CORPORATION  
ARCADIA TELEPHONE COMPANY  
ARIZONA TELEPHONE COMPANY  
ARVIG TELEPHONE COMPANY  
ASOTIN TELEPHONE COMPANY  
BADGER TELECOM, LLC  
BARNARDSVILLE TELEPHONE COMPANY  
BLACK EARTH TELEPHONE COMPANY, LLC  
BLUE RIDGE TELEPHONE COMPANY  
BONDUEL TELEPHONE COMPANY  
BRIDGE WATER TELEPHONE COMPANY  
BURLINGTON, BRIGHTON & WHEATLAND TELEPHONE COMPANY  
BUTLER TELEPHONE COMPANY, INC.  
CALHOUN CITY TELEPHONE COMPANY, INC.  
CAMDEN TELEPHONE COMPANY  
CAMDEN TELEPHONE AND TELEGRAPH COMPANY, INC.  
CENTRAL STATE TELEPHONE COMPANY, LLC  
CHATHAM TELEPHONE COMPANY  
CLEVELAND COUNTY TELEPHONE COMPANY, INC.  
COBBOSSEECONTEE TELEPHONE COMPANY  
COMMUNICATIONS CORPORATION OF INDIANA  
COMMUNICATION CORPORATION OF MICHIGAN  
COMMUNICATIONS CORPORATION OF SOUTHERN INDIANA  
CONCORD TELEPHONE EXCHANGE, INC.  
CONTINENTAL TELEPHONE COMPANY  
DECATUR TELEPHONE COMPANY  
DELTA COUNTY TELE-COMM, INC.  
DEPOSIT TELEPHONE COMPANY  
DICKEYVILLE TELEPHONE, LLC  
EASTCOAST TELECOM, INC.  
EDWARDS TELEPHONE COMPANY, INC.  
GRANTLAND TELECOM, INC.  
HAMPDEN TELEPHONE COMPANY  
HAPPY VALLEY TELEPHONE COMPANY  
HARTLAND & ST. ALBANS TELEPHONE COMPANY  
HOLLIS TELEPHONE COMPANY, INC.  
HOME TELEPHONE COMPANY, INC.  
HOME TELEPHONE COMPANY  
HOME TELEPHONE COMPANY OF PITTSBORO, INC.  
HORNITOS TELEPHONE COMPANY  
HUMPHREYS COUNTY TELEPHONE COMPANY  
ISLAND TELEPHONE COMPANY  
KEARSARGE TELEPHONE COMPANY

VIRGINIA  
OHIO  
ARIZONA  
MINNESOTA  
WASHINGTON  
DELAWARE  
NORTH CAROLINA  
DELAWARE  
GEORGIA  
WISCONSIN  
MINNESOTA  
WISCONSIN  
ALABAMA  
MISSISSIPPI  
INDIANA  
GEORGIA  
DELAWARE  
MICHIGAN  
ARKANSAS  
MAINE  
INDIANA  
MICHIGAN  
INDIANA  
TENNESSEE  
OHIO  
ARKANSAS  
COLORADO  
NEW YORK  
DELAWARE  
WISCONSIN  
NEW YORK  
WISCONSIN  
MAINE  
CALIFORNIA  
MAINE  
NEW HAMPSHIRE  
INDIANA  
OREGON  
INDIANA  
CALIFORNIA  
TENNESSEE  
MICHIGAN  
NEW HAMPSHIRE

LESLIE COUNTY TELEPHONE COMPANY, INC.  
LEWIS RIVER TELEPHONE COMPANY, INC.  
LEWISPORT TELEPHONE COMPANY

KENTUCKY  
WASHINGTON  
KENTUCKY

\* 50% or more owned comanies

**EXHIBIT 2**  
**Page 6 of 9**

3

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**TELEPHONE AND DATA SYSTEMS, INC.**  
**SUBSIDIARY AND AFFILIATED COMPANIES**  
**December 31, 2006**

LITTLE MIAMI COMMUNICATIONS CORPORATION  
LUDLOW TELEPHONE COMPANY  
MAHANAY & MAHANTANGO TELEPHONE COMPANY  
MCCLELLANVILLE TELEPHONE COMPANY, INC.  
MCDANIEL TELEPHONE COMPANY  
MERRIMACK COUNTY TELEPHONE COMPANY  
MID-AMERICA TELEPHONE, INC.  
MID-PLAINS TELEPHONE, LLC  
MID-STATE TELEPHONE COMPANY  
MIDWAY TELEPHONE COMPANY, LLC  
MOUNT VERNON TELEPHONE COMPANY, LLC  
MYRTLE TELEPHONE COMPANY, INC.  
NELSON BALLGROUND TELEPHONE COMPANY  
NEW CASTLE TELEPHONE COMPANY  
NEW LONDON TELEPHONE COMPANY  
NORTHFIELD TELEPHONE COMPANY  
NORWAY TELEPHONE COMPANY, INC.  
OAKMAN TELEPHONE COMPANY, INC.  
OAKWOOD TELEPHONE COMPANY  
OKLAHOMA COMMUNICATION SYSTEMS, INC.  
ORCHARD FARM TELEPHONE COMPANY  
ORISKANY FALLS TELEPHONE CORPORATION  
PEOPLES TELEPHONE COMPANY, INC.  
PERKINSVILLE TELEPHONE COMPANY, INC.  
PORT BYRON TELEPHONE COMPANY  
POTLATCH TELEPHONE COMPANY, INC.  
QUINCY TELEPHONE COMPANY  
RIVERSIDE TELECOM, LLC  
S & W TELEPHONE COMPANY, INC.  
SALEM TELEPHONE COMPANY  
SALUDA MOUNTAIN TELEPHONE COMPANY  
SCANDANAVIA TELEPHONE COMPANY, LLC  
SERVICE TELEPHONE COMPANY, INC.  
SHIAWASSEE TELEPHONE COMPANY  
SOMERSET TELEPHONE COMPANY  
SOUTHEAST MISSISSIPPI TELEPHONE COMPANY  
SOUTHEAST TELEPHONE COMPANY OF WISCONSIN, INC.  
SOUTHWESTERN TELEPHONE COMPANY  
ST. STEPHEN TELEPHONE COMPANY  
STOCKBRIDGE & SHERWOOD TELEPHONE COMPANY, LLC.  
STRASBURG TELEPHONE COMPANY  
SUGAR VALLEY TELEPHONE COMPANY  
TELLICO TELEPHONE COMPANY, INC.  
TENNESSEE TELEPHONE COMPANY  
TENNEY TELEPHONE COMPANY, LLC  
THE FARMERS TELEPHONE COMPANY, LLC  
THE ISLAND TELEPHONE COMPANY  
THE MERCHANTS & FARMERS TELEPHONE COMPANY  
THE STOUTLAND TELEPHONE COMPANY  
THE VANLUE TELEPHONE COMPANY  
THE WEST PENOBSCOT TELEPHONE & TELEGRAPH COMPANY  
TIPTON TELEPHONE COMPANY, INC.  
TOWNSHIP TELEPHONE COMPANY, INC.  
TRI-COUNTY TELEPHONE COMPANY, INC.  
UTELCO, LLC  
VERNON TELEPHONE COMPANY  
VIRGINIA TELEPHONE COMPANY

**STATE OF**  
**INCORPORATION**

---

OHIO  
VERMONT  
PENNSYLVANIA  
SOUTH CAROLINA  
WASHINGTON  
NEW HAMPSHIRE  
OKLAHOMA  
DELAWARE  
MINNESOTA  
DELAWARE  
DELAWARE  
MISSISSIPPI  
GEORGIA  
VIRGINIA  
MISSOURI  
VERMONT  
SOUTH CAROLINA  
ALABAMA  
OHIO  
OKLAHOMA  
MISSOURI  
NEW YORK  
ALABAMA  
VERMONT  
NEW YORK  
IDAHO  
FLORIDA  
DELAWARE  
INDIANA  
KENTUCKY  
NORTH CAROLINA  
WISCONSIN  
NORTH CAROLINA  
MICHIGAN  
MAINE  
MISSISSIPPI  
WISCONSIN  
ARIZONA  
SOUTH CAROLINA  
WISCONSIN  
COLORADO  
PENNSYLVANIA  
TENNESSEE  
TENNESSEE  
DELAWARE  
DELAWARE  
MAINE  
INDIANA  
MISSOURI  
OHIO  
MAINE  
INDIANA  
NEW YORK  
INDIANA  
DELAWARE  
NEW YORK  
VIRGINIA

WARREN TELEPHONE COMPANY  
WAUNAKEE TELEPHONE COMPANY, LLC  
WILLISTON TELEPHONE COMPANY  
WILTON TELEPHONE COMPANY, INC.

MAINE  
DELAWARE  
SOUTH CAROLINA  
NEW HAMPSHIRE

\* 50% or more owned comanies

4

---

**EXHIBIT 2**

**Page 8 of 9**

**TELEPHONE AND DATA SYSTEMS, INC.**  
**SUBSIDIARY AND AFFILIATED COMPANIES**  
**December 31, 2006**

**STATE OF**  
**INCORPORATION**

WINSTED TELEPHONE COMPANY  
WINTERHAVEN TELEPHONE COMPANY  
WOLVERINE TELEPHONE COMPANY  
WYANDOTTE TELEPHONE COMPANY

MINNESOTA  
CALIFORNIA  
MICHIGAN  
OKLAHOMA

**OTHER COMPANIES**

CHORUS NETWORKS, LLC  
MCT COMMUNICATIONS, INC.  
TDS COMMUNICATIONS SOLUTIONS, INC.  
TDS LONG DISTANCE CORPORATION  
TDS METROCOM, LLC  
TDS TELECOM SERVICE CORPORATION  
TDSI TELECOMMUNICATIONS CORPORATION  
TRI-COUNTY COMMUNICATIONS CORPORATION  
U.S. LINK, INC.

WISCONSIN  
NEW HAMPSHIRE  
DELAWARE  
DELAWARE  
DELAWARE  
IOWA  
DELAWARE  
INDIANA  
MINNESOTA

**TDS GROUP**

AFFILIATE FUND  
COMMVEST, INC.  
NATIONAL TELEPHONE & TELEGRAPH COMPANY  
NELSON-BALL GROUND CELLULAR TELEPHONE & SERVICES, INC.  
SUTTLE-STRAUS, INC.  
TDSI CORPORATION

DELAWARE  
DELAWARE  
CALIFORNIA  
GEORGIA  
WISCONSIN  
DELAWARE

\* 50% or more owned companies

EXHIBIT 3  
Page 1 of 39

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- Products & Services ▾
- Special Offers
- Business Services
- About Us ▾
- Customer Support ▾
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U.S. Cellular Home

Products and Services

Plans

› Coverage Maps

Phones

Prepaid Wireless

Business Services

Features

Special Offers

Accessories

About Us

Customer Support

**COVERAGE MAPS**

**Choose a coverage map:**

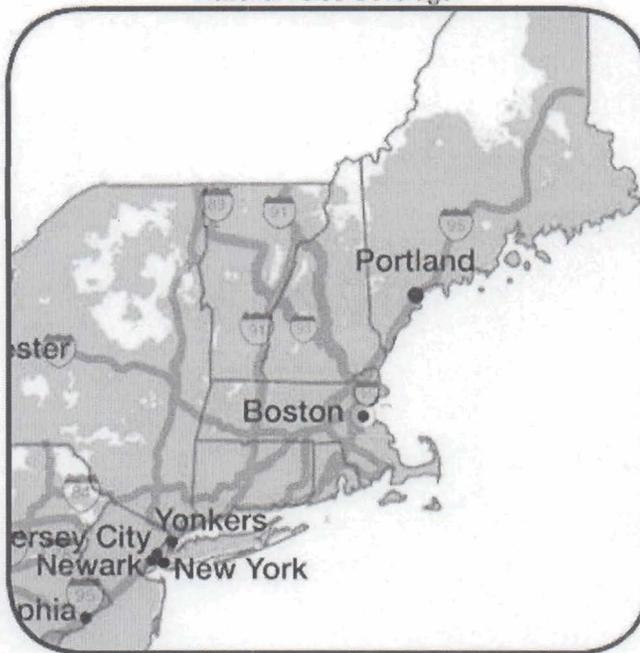
Move mouse over small map for close-up view. Single-click the Viewfinder to lock/unlock it.

- National
  - Wide Area
  - Mobile-to-Mobile
  - Prepaid Wireless
  - Smartphones
  - Picture Messaging
  - easyedge<sup>SM</sup>
  - Download Service



**National Voice Coverage**

Chicagoland  
- Click Here -



To print, right-click and select 'Print' from the menu.

- National Calling Area, including Night and Weekend and CALL ME Minutes<sup>®</sup>
- No Coverage



Having trouble seeing the Map?

\*The map shows an approximation of service coverage. Actual coverage may vary. Service may be interrupted or limited due to weather, terrain, customer equipment, or network limitations. Coverage indoors may also vary. U.S. Cellular does not guarantee coverage. User may incur roaming charges at borders of calling areas.



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About SSL Certificates

Choose a coverage map:

Move mouse over small map for close-up view. Single-click the Viewfinder to lock/unlock it.

- National
- Wide Area
- Mobile-to-Mobile
- Prepaid Wireless
- Smartphones
- Picture Messaging
- easyedge<sup>SM</sup>
- Download Service



National Voice Coverage



-  National Calling Area, including Night and Weekend and CALL ME Minutes<sup>®</sup>
-  No Coverage

Rev. 08.02.07



### Coverage Legend Terms

**BEST:** In general, the areas shown in dark orange should have the strongest signal strength and be sufficient for most in-building coverage. However, in-building coverage can and will be adversely affected by the thickness/construction type of walls, or your location in the building (i.e., in the basement, in the middle of the building with multiple walls, etc.) This AT&T owned network provides GSM, GPRS, and EDGE service. Learn more about our technology.

**GOOD:** The areas shown in the medium orange should be sufficient for on-street or in-the-open coverage, most in-vehicle coverage and possibly some in-building coverage. This AT&T owned network provides GSM, GPRS, and EDGE service. Learn more about our technology.

**MODERATE:** The areas shown in the light orange should have sufficient signal strength for on-street or in-the-open coverage, but may not have it for in-vehicle coverage or in-building coverage. This AT&T owned network provides GSM, GPRS, and EDGE service. Learn more about our technology.

**PARTNER:** The areas shown as an orange stripped pattern represent the coverage of unaffiliated carriers and should have sufficient signal strength for on-street or in-the-open coverage, but may not have it for in-vehicle coverage or in-building coverage. Excessive use of Partner coverage may subject your service to early termination, in accordance with your service terms. Data services may not be available.

**3G/Mobile Broadband:** 3G coverage is available in select metropolitan areas. 3G capable device and eligible rate plan required. However like all coverage it can and will be adversely affected by distance from cell site, weather, foliage, tower congestion and other factors. You'll know you're in our 3G coverage area when the 3G network indicator appears beside the signal bars on your phone. If you are outside our 3G coverage area, you can still access services using our EDGE network. Learn more about 3G.





**Important Information About the Coverage Map**

Map may include areas served by unaffiliated carriers, and may depict their licensed area rather than an approximation of their coverage. Actual coverage area may differ substantially from map graphics, and coverage may be affected by such things as terrain, weather, foliage, buildings and other construction, signal strength, customer equipment and other factors. AT&T does not guarantee coverage. Charges will be based on the location of the site receiving and transmitting the call, not the location of the subscriber. Your phone's display does not indicate the rate you will be charged.



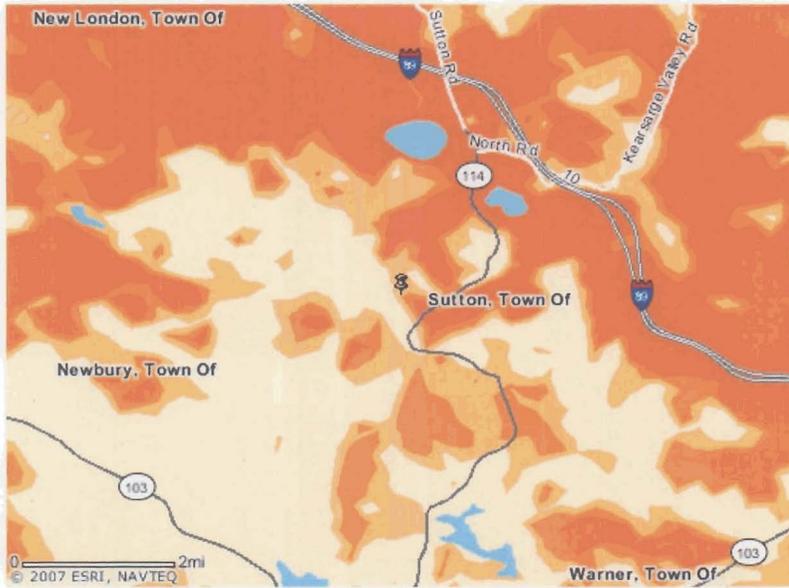


**AT&T Coverage Viewer**

AT&T's wireless network has the largest digital voice and data coverage in America. Enter your location to see coverage in your area. You can zoom in and re-center the map by clicking on it.

**Address**

Sutton, NH



**Coverage Legend**

- Best
  - Partner
  - Good
  - Moderate
  - No Coverage
- / Mobile Broadband Coverage

Coverage last updated on: May 31, 2007. Map depicts an approximation of coverage.

**Important Information About the Coverage Map**

Map may include areas served by unaffiliated carriers, and may depict their licensed area rather than an approximation of the coverage there. Actual coverage area may differ substantially from map graphics, and coverage may be affected by such things as terrain, weather, foliage, buildings and other construction, signal strength, customer equipment and other factors. AT&T does not guarantee coverage. Charges will be based on the location of the site receiving and transmitting the call, not the location of the subscriber.

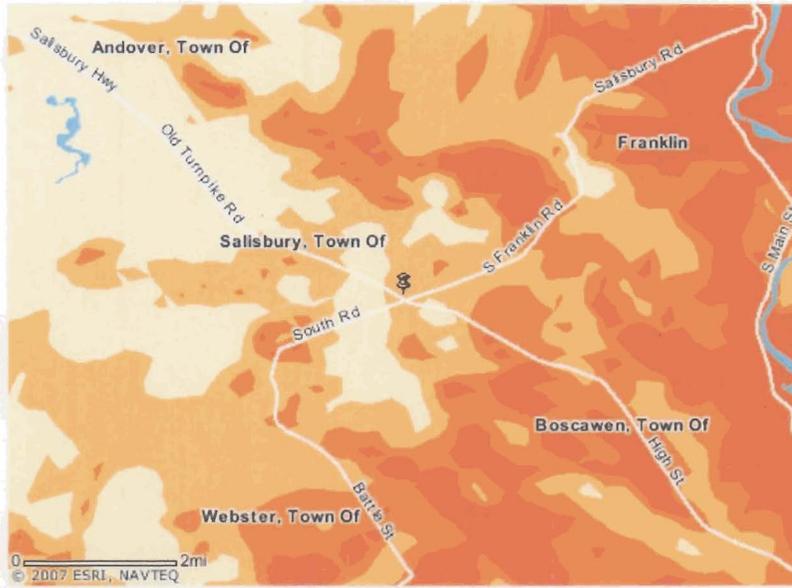


**AT&T Coverage Viewer**

AT&T's wireless network has the largest digital voice and data coverage in America. Enter your location to see coverage in your area. You can zoom in and re-center the map by clicking on it.

**Address**

Salisbury, NH



**Coverage Legend**

- Best
- Good
- Moderate
- Partner
- No Coverage
- 4G/Mobile Broadband Coverage

Coverage last updated on: May 31, 2007. Map depicts an approximation of coverage.

**Important Information About the Coverage Map**

Map may include areas served by unaffiliated carriers, and may depict their licensed area rather than an approximation of the coverage there. Actual coverage area may differ substantially from map graphics, and coverage may be affected by such things as terrain, weather, foliage, buildings and other construction, signal strength, customer equipment and other factors. AT&T does not guarantee coverage. Charges will be based on the location of the site receiving and transmitting the call, not the location of the subscriber.

## Coverage Locator

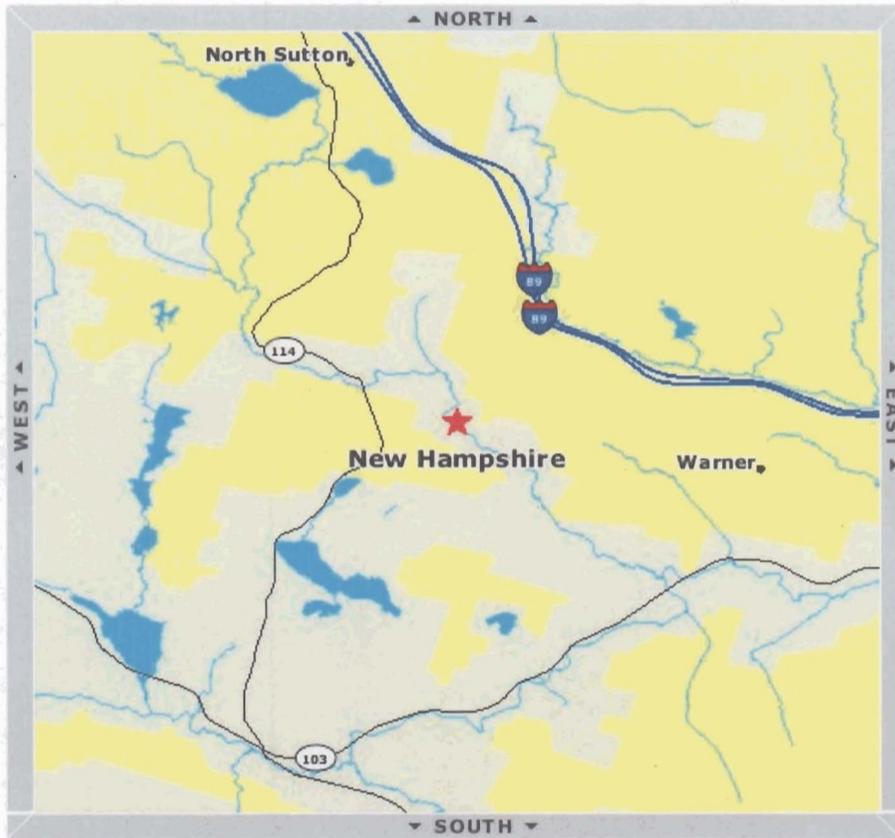
**Important Map Information**[Back to Coverage Locator](#)

The maps that display within the Coverage Locator Tool are not a guarantee of coverage and contain areas with no service. The maps rendered show only approximations (based on our internal data) of where rates and coverage apply.

- Verizon Wireless coverage depictions in the rate and coverage maps are based on generally accepted engineering predictive and modeling tools, used to measure radio frequency transmissions from cell towers. Our rate and coverage maps depict wireless coverage based on predictive modeling parameters determined by our network engineers.
- Since wireless service is transmitted on a radio signal over the airways, it is subject to network and transmission limitations such as cell site availability (particularly near boundaries and in remote areas).
- Your wireless equipment, weather, topography and other environmental considerations associated with radio technology, also affects wireless service. For example, your wireless phone may work perfectly driving home one night, but then not work as well driving in the same place the next night during a thunderstorm. Additionally, service may vary significantly within buildings.
- Some coverage information on service outside the Verizon Wireless proprietary network, although depicted as America's Choice, is based on information from other carriers (roaming partners) or publicly available information, and we cannot vouch for its accuracy.
- With "all-digital" devices you can only make and receive calls when digital service is available. When digital service is not available, your device will not operate or be able to make 911 calls.
- The rate and coverage maps also show approximately where the calling plan home airtime rates apply.

We advise you to check the roaming indicator on your wireless phone to determine actual areas where rates are available. When the phone's roam indicator is not displayed, or the banner display reads "Verizon Wireless Network," home airtime rates apply. When the digital indicator is on, digital features and services are available. When the roam indicator is flashing or the banner display reads "Extended Network" home airtime rates still apply, but additional features and services may not be available. When the roam indicator is solid or the banner display reads "Roaming," roam rates apply and digital features and services are not available.

[Back to Coverage Locator](#)



City  State  OR Zip

Coverage Options [View descriptions](#)

**America's Choice®**

- Initiated before 2/21/05
- Initiated on or after 2/21/05
- National SingleRate<sup>sm</sup>
- Inpulse<sup>sm</sup>/EasyPay
- Verizon Wireless Network
- NationalAccess & Enhanced Services
- BroadbandAccess & V CAST<sup>sm</sup>
- V CAST Mobile TV

[Important information about Coverage Locator Maps](#)

\*Extended coverage provided through agreements with other wireless carriers.

**This map is not a guarantee of coverage and may contain areas with no service.**

This map is a general prediction of where rates and outdoor coverage apply based on our internal data. Wireless service is subject to limitations, particularly near boundaries and in remote areas. Customer equipment, cell site availability, topography and other environmental considerations also affect service, which may vary significantly within buildings. Service outside the Verizon Wireless network although depicted as America's Choice or National SingleRate, is based on information from other carriers or publicly available information, and we cannot ensure its accuracy. With "All-Digital" devices you can make and receive calls only when digital service is available in the America's Choice Home Airtime Rate and Coverage Area and when digital service is available while roaming. When digital service is not available your device will not operate or be able to make 911 calls. Check your roaming indicator to determine where rates apply.



City  State  OR Zip

Coverage Options [View descriptions](#)

**America's Choice®**

- Initiated before 2/21/05
- Initiated on or after 2/21/05

- National SingleRate<sup>SM</sup>**
- INpulse<sup>SM</sup>/EasyPay**
- Verizon Wireless Network**

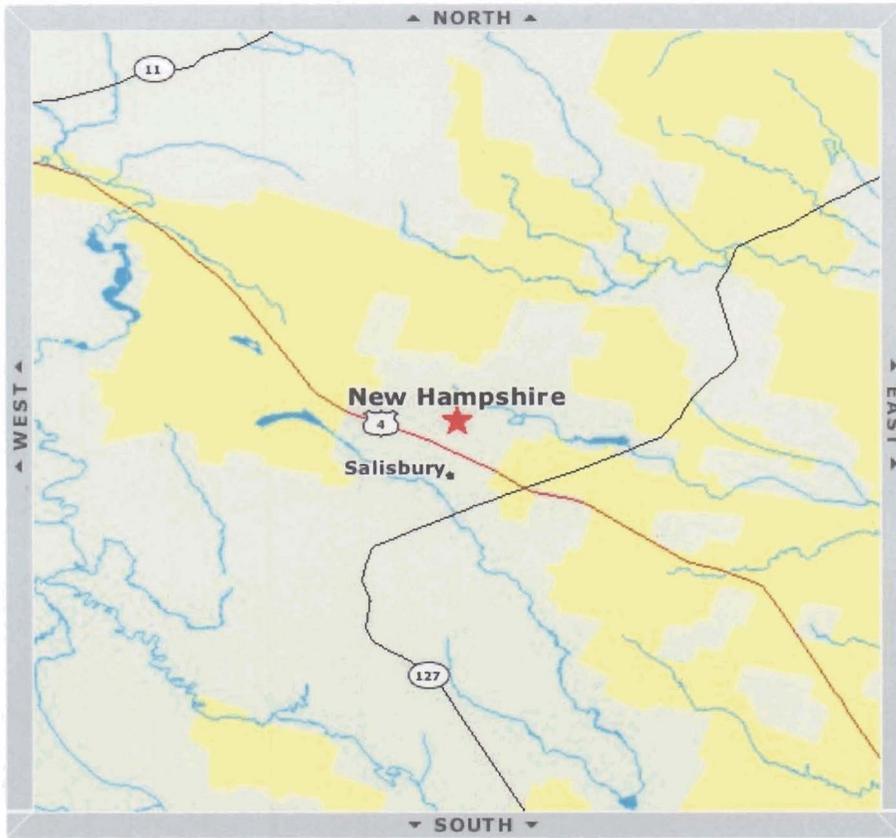
- NationalAccess & Enhanced Services**
- BroadbandAccess & V CAST<sup>SM</sup>**
- V CAST Mobile TV**

[Important information about Coverage Locator Maps](#)

\*Extended coverage provided through agreements with other wireless carriers.

**The map is not a guarantee of coverage and contains areas with no service. Service will not work, and calls cannot be placed or received outside the America's Choice Coverage Area.**

This map shows approximately where rates and coverage apply based on our internal data. Wireless service is subject to network and transmission limitations, including cell site unavailability, particularly near boundaries and in remote areas. Customer equipment, weather, topography and other environmental considerations associated with radio technology also affect service and service may vary significantly within buildings. Some information on service outside the Verizon Wireless proprietary network, although depicted as America's Choice, is based on information from other carriers or publicly available information, and we can ensure its accuracy. With "all-digital" devices you can only make and receive calls when digital service is available. **When digital service is not available your device will not operate or be able to make 911 calls.**



City  State  OR Zip

Coverage Options [View descriptions](#)

**America's Choice**

- Initiated before 2/21/05
- Initiated on or after 2/21/05
- National SingleRate<sup>sm</sup>
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- Verizon Wireless Network

- NationalAccess & Enhanced Services
- BroadbandAccess & V CAST<sup>sm</sup>
- V CAST Mobile TV

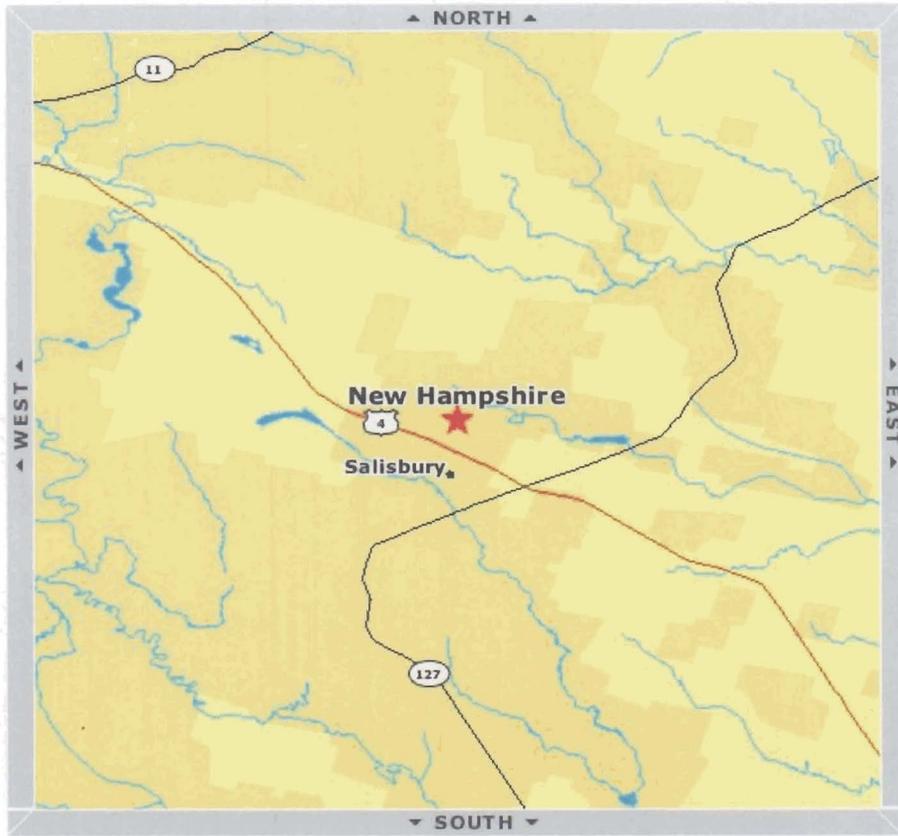
[Important information about Coverage Locator Maps](#)

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EXHIBIT 3  
Page 14 of 39



City  State  OR Zip

Coverage Options [View descriptions](#)

- America's Choice®**
- Initiated before 2/21/05
  - Initiated on or after 2/21/05
  - National SingleRate<sup>sm</sup>
  - INpulse<sup>sm</sup>/EasyPay
  - Verizon Wireless Network
  - NationalAccess & Enhanced Services
  - BroadbandAccess & V CAST<sup>sm</sup>
  - V CAST Mobile TV

[Important information about Coverage Locator Maps](#)

\*Extended coverage provided through agreements with other wireless carriers.

**The map is not a guarantee of coverage and contains areas with no service. Service will not work, and calls cannot be placed or received outside the America's Choice Coverage Area.**

This map shows approximately where rates and coverage apply based on our internal data. Wireless service is subject to network and transmission limitations, including cell site unavailability, particularly near boundaries and in remote areas. Customer equipment, weather, topography and other environmental considerations associated with radio technology also affect service and service may vary significantly within buildings. Some information on service outside the Verizon Wireless proprietary network, although depicted as America's Choice, is based on information from other carriers or publicly available information, and we can ensure its accuracy. With "all-digital" devices you can only make and receive calls when digital service is available. **When digital service is not available your device will not operate or be able to make 911 calls.**

## Sprint PCS Online Help

### Important Coverage Information

Our coverage maps provide high level estimates of our coverage areas when using your device outdoors under optimal conditions. Coverage isn't available everywhere. Estimating wireless coverage and signal strength is not an exact science.



There are gaps in coverage within our estimated coverage areas that, along with other factors both within and beyond our control (network problems, software, signal strength, your wireless device, structures, buildings, weather, geography, topography, etc.), will result in dropped and blocked connections, slower data speeds, or otherwise impact the quality of services.



Services that rely on location information, such as E911 and GPS navigation, depend on your device's ability to acquire satellite signals (typically not available indoors) and network coverage. E911 services also depend local emergency service provider systems/support. Estimated future coverage subject to change.

Need more help:  
Try browsing other topics, searching the index or contact us directly:

- Call 888-211-4727

[Print this topic](#)

EXHIBIT 3  
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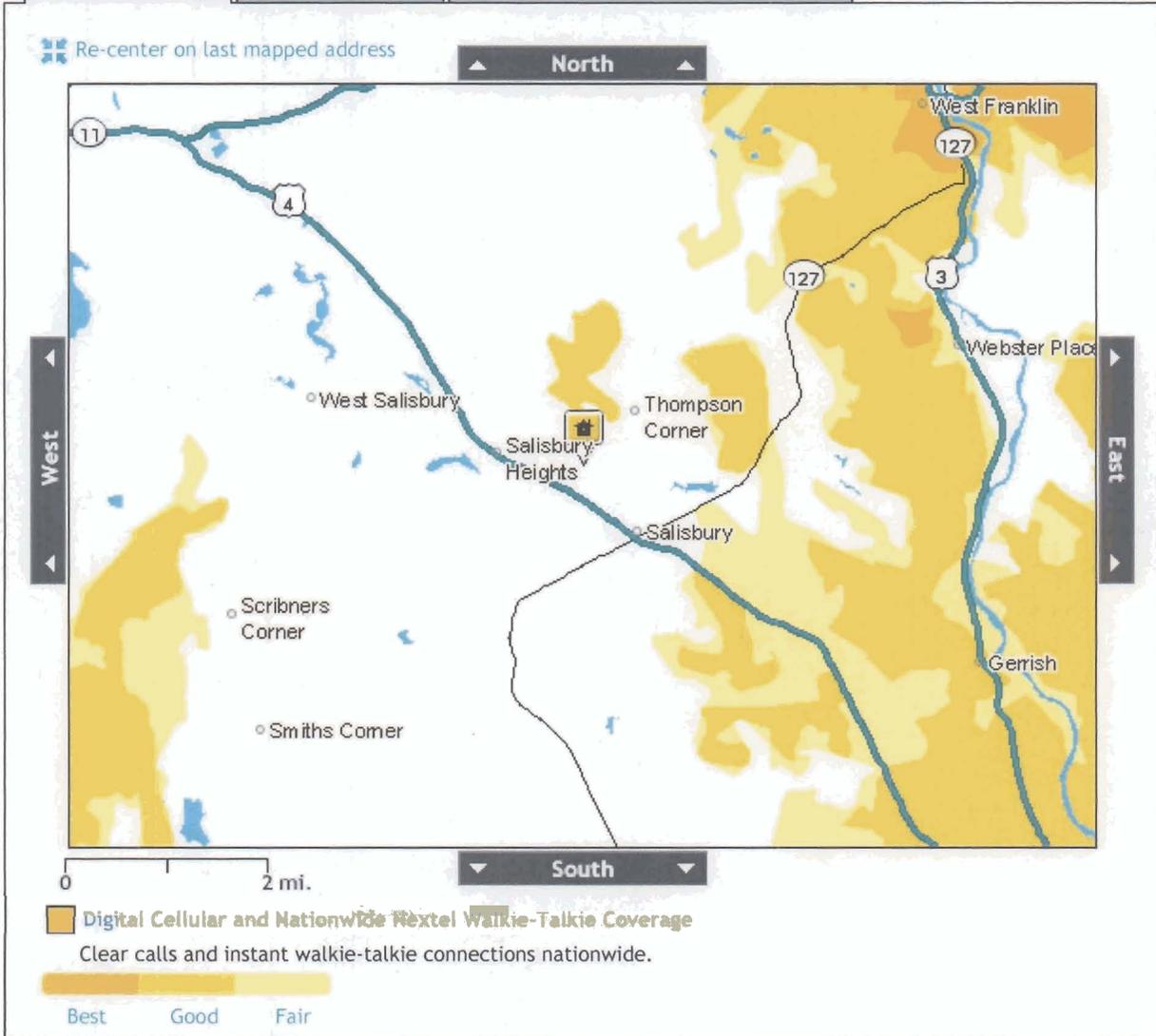
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### Power Network Coverage Tool

Sprint gives you the power to know you'll have coverage where it matters. This tool provides high-level estimates of our wireless coverage. Coverage is not available everywhere and varies based on a number of factors. [Learn more.](#)

**Nextel Coverage** | **Sprint Coverage** | **Sprint Nextel PowerSource Coverage**



#### Recent Coverage Additions:

- Show towers built within the last 90 days
- Recent towers

#### Upcoming Coverage Improvements:

- Anticipated coverage in the next 120 days
- Future towers
- Estimated coverage indicated with stripes

[Check Out Phones with Selected Capabilities](#)

Show towers

[Map an Address](#) 

If you have a single band or dual band phone (older phones), certain basic data services, or plans that do not include roaming, you may have different coverage.

 **Important coverage information**

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Zoom In

03268 

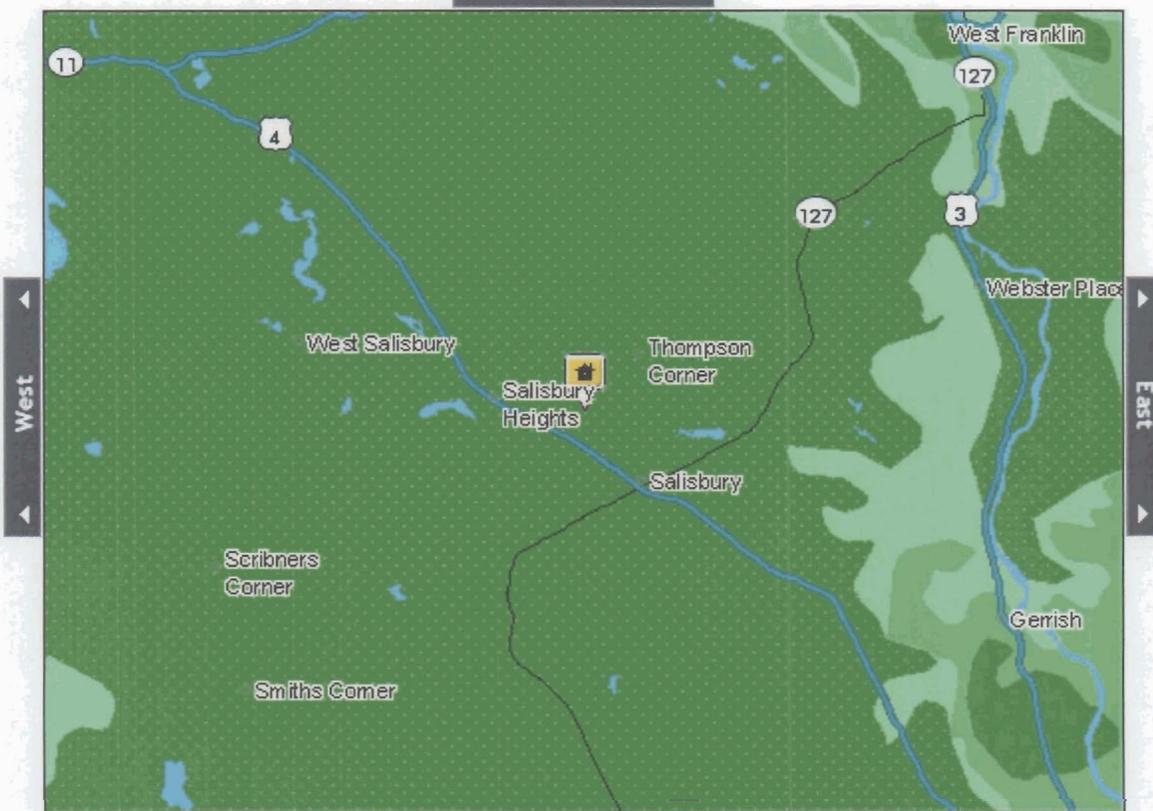


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## Power Network Coverage Tool

Sprint gives you the power to know you'll have coverage where it matters. This tool provides high-level estimates of our wireless coverage. Coverage is not available everywhere and varies based on a number of factors. [Learn more.](#)



Sprint National Network

Clear voice and data service across the US.

Best Good Fair

Sprint Mobile Broadband Network

Power Vision services and wireless connectivity at broadband-like speeds.

Broadband download speeds

Increased broadband upload and download speeds

Additional Voice Coverage

Expanded calling areas available with most phones.

### Recent Coverage Additions:

Show towers built within the last 90 days

Recent towers

### Upcoming Coverage Improvements:

Anticipated coverage in the next

Future towers

Estimated coverage

 Estimated coverage  
 indicated with [Map an Address](#) 

Zoom Out

### Check Out Phones with Selected Capabilities

[Show online](#)

[City names](#)

If you have a single band or dual band phone (older phones), certain basic data services, or plans that do not include roaming you may have different coverage.

[Important coverage information](#)

[Zoom In](#)

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## Power Network Coverage Tool

Sprint gives you the power to know you'll have coverage where it matters. This tool provides high-level estimates of our wireless coverage. Coverage is not available everywhere and varies based on a number of factors. [Learn more.](#)

**Nextel Coverage** | **Sprint Coverage** | **Sprint Nextel PowerSource Coverage**

Re-center on last mapped address

North

West Salisbury, Salisbury Heights, Thompson Corner, Salisbury, West Franklin, Webster Place, Scribners Corner, Smiths Comer, Gerish

11, 4, 127, 3

West East

0 2 mi. South

- Sprint Nextel PowerSource** -- The power of Nextel Walkie-Talkie plus Sprint voice and data:
  - Make voice calls anywhere on the Nationwide Sprint PCS Network
  - Connect instantly coast-to-coast with Nextel Walkie-Talkie on the Nextel National Network
- Nationwide Sprint PCS Network only**  
Clear voice and data service across the US.
- Nationwide Nextel Walkie-Talkie Coverage only**  
Instant walkie-talkie connections coast-to-coast.

Also available with:

- Additional PowerSource Voice Coverage**
- Expanded voice coverage while you are off the Nationwide Sprint PCS Network

Check Out Phones with Selected Capabilities

**EXHIBIT 3**  
**Page 22 of 39**

[Map an Address](#) 

 City names  
 Zoom Out

If you have a single band or dual band phone ([older phones](#)), certain basic data services, or plans that do not include roaming, you may have different coverage.

 [Important coverage information](#)

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Zoom In

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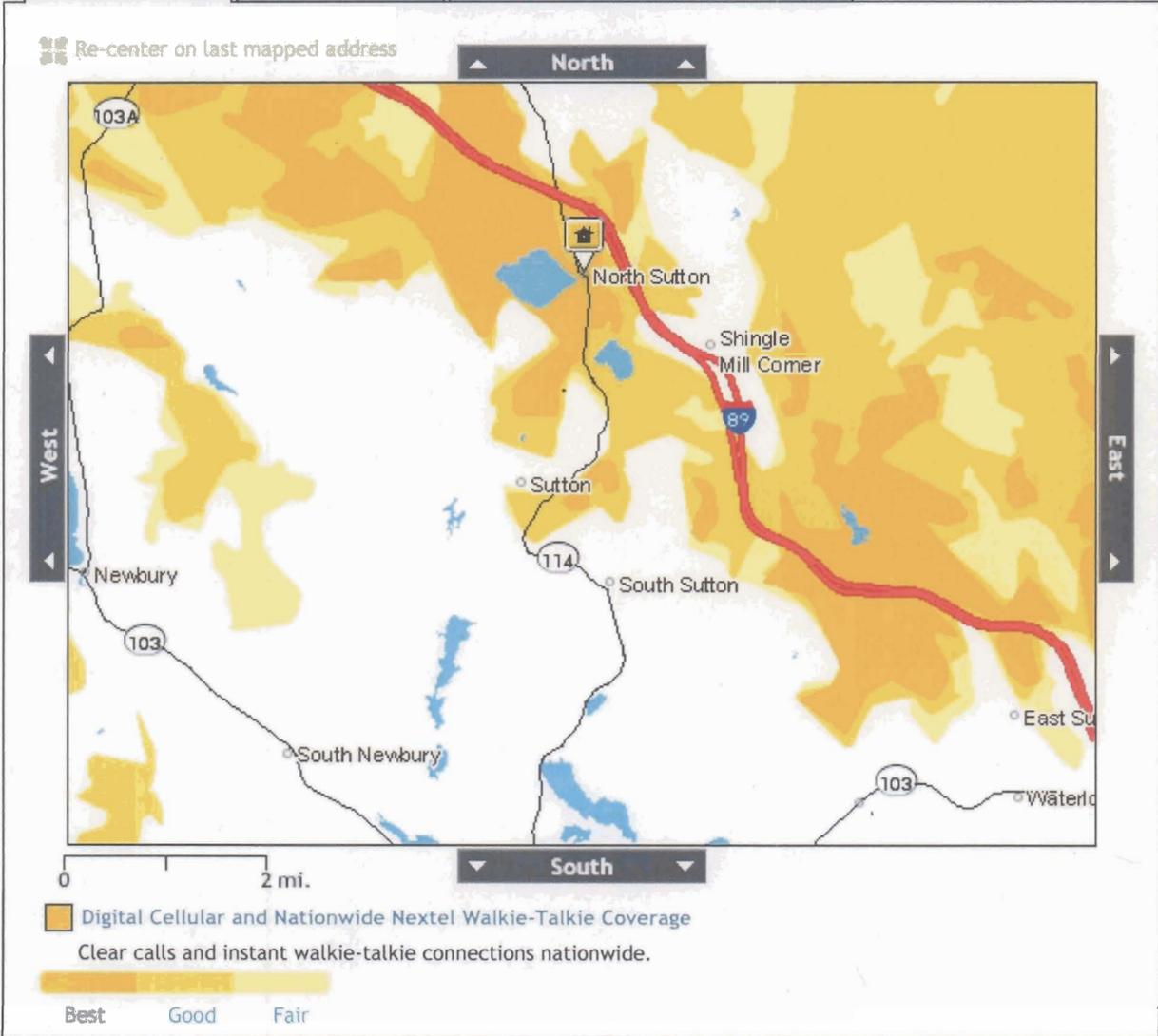
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[Enter your search question here

## Power Network Coverage Tool

Sprint gives you the power to know you'll have coverage where it matters. This tool provides high-level estimates of our wireless coverage. Coverage is not available everywhere and varies based on a number of factors. [Learn more.](#)

**Nextel Coverage** | **Sprint Coverage** | **Sprint Nextel PowerSource Coverage**



### Recent Coverage Additions:

- Show towers built within the last 90 days
- Recent towers

### Upcoming Coverage Improvements:

- Anticipated coverage in the next 120 days
- Future towers
- Estimated coverage indicated with stripes

Check Out Phones with Selected Capabilities

City names

**EXHIBIT 3**  
**Page 24 of 39**

[Map an Address](#) 

If you use a single band or dual band phone (older phones), certain basic data services, or plans that do not include roaming, you may have different coverage.

 **Important coverage information**

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- [Nextel Coverage](#)
- [Sprint Coverage](#)
- [Sprint Nextel PowerSource Coverage](#)

Re-center on last mapped address North

West East

0 2 mi. South

**Sprint National Network**  
Clear voice and data service across the US.

Best Good Fair

**Sprint Mobile Broadband Network**  
Power. Vision services and wireless connectivity at broadband-like speeds.

Broadband download speeds

Increased broadband upload and download speeds

---

**Additional Voice Coverage**  
Expanded calling areas available with most phones.

### Recent Coverage Additions:

Show towers built within the last 90 days



### Upcoming Coverage Improvements:

Anticipated coverage in the next 120 days



Estimated coverage


 estimated coverage  
 indicated with [Map an Address](#) 

### Check Out Phones with Selected Capabilities

Show Online

Cell names

If you have a single band or dual band phone (older phones), certain basic data services, or plans that do not include roaming you may have different coverage.

[Important coverage information](#)



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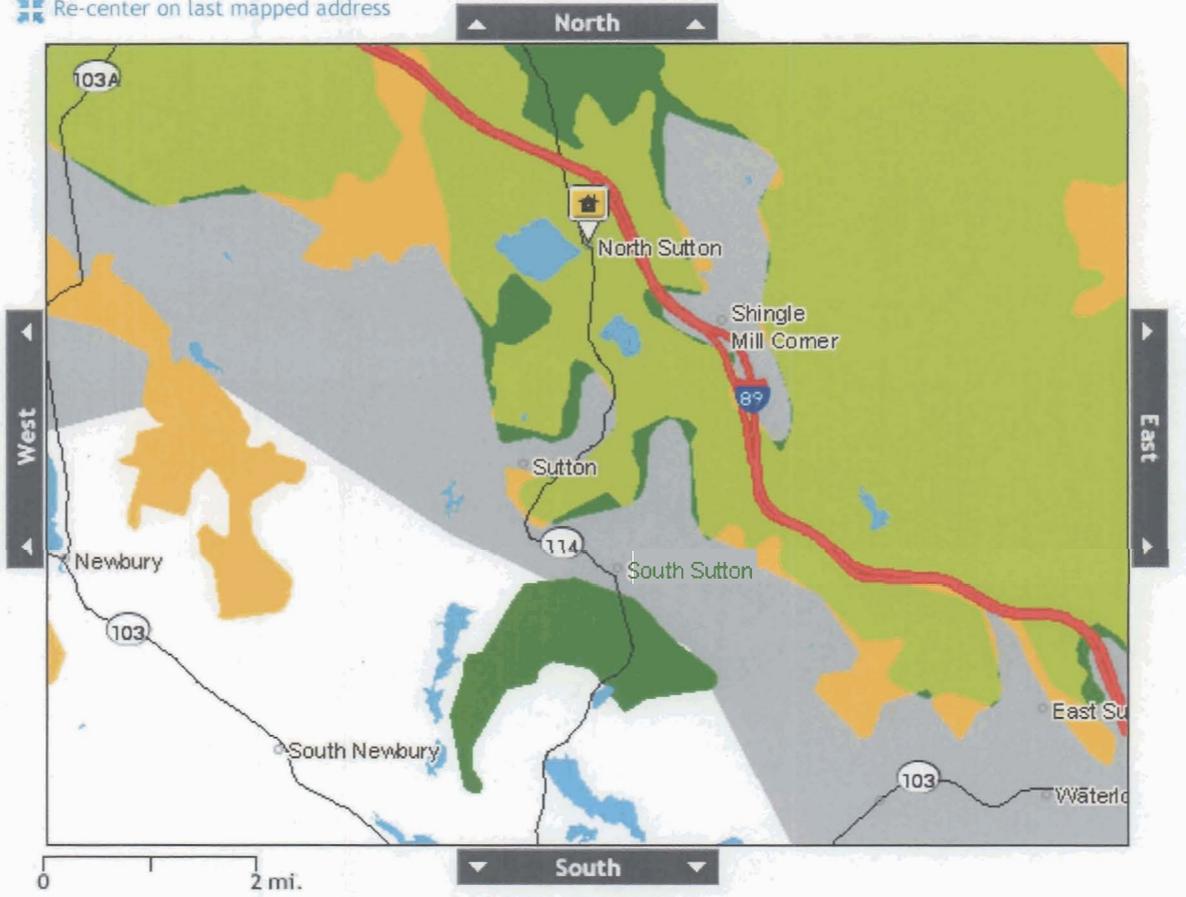
Enter your search question here

## Power Network Coverage Tool

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**Nextel Coverage** | **Sprint Coverage** | **Sprint Nextel PowerSource Coverage**

Re-center on last mapped address



- Sprint Nextel PowerSource** - The power of Nextel Walkie-Talkie plus Sprint voice and data:
- Make voice calls anywhere on the Nationwide Sprint PCS Network
  - Connect instantly coast-to-coast with Nextel Walkie-Talkie on the Nextel National Network

**Nationwide Sprint PCS Network only**  
Clear voice and data service across the US.

**Nationwide Nextel Walkie-Talkie Coverage only**  
Instant walkie-talkie connections coast-to-coast.

Also available with:

- Additional PowerSource Voice Coverage
- Expanded voice coverage while you are off the Nationwide Sprint PCS Network

**Check Out Phones with Selected Capabilities**

**EXHIBIT 3**  
**Page 28 of 49**

 City names  
 Zoom Out

[Map an Address](#) 

If you have a single band or dual band phone (older phones), certain basic data services, or plans that do not include roaming, you may have different coverage.

 [Important coverage information](#)

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Zoom In

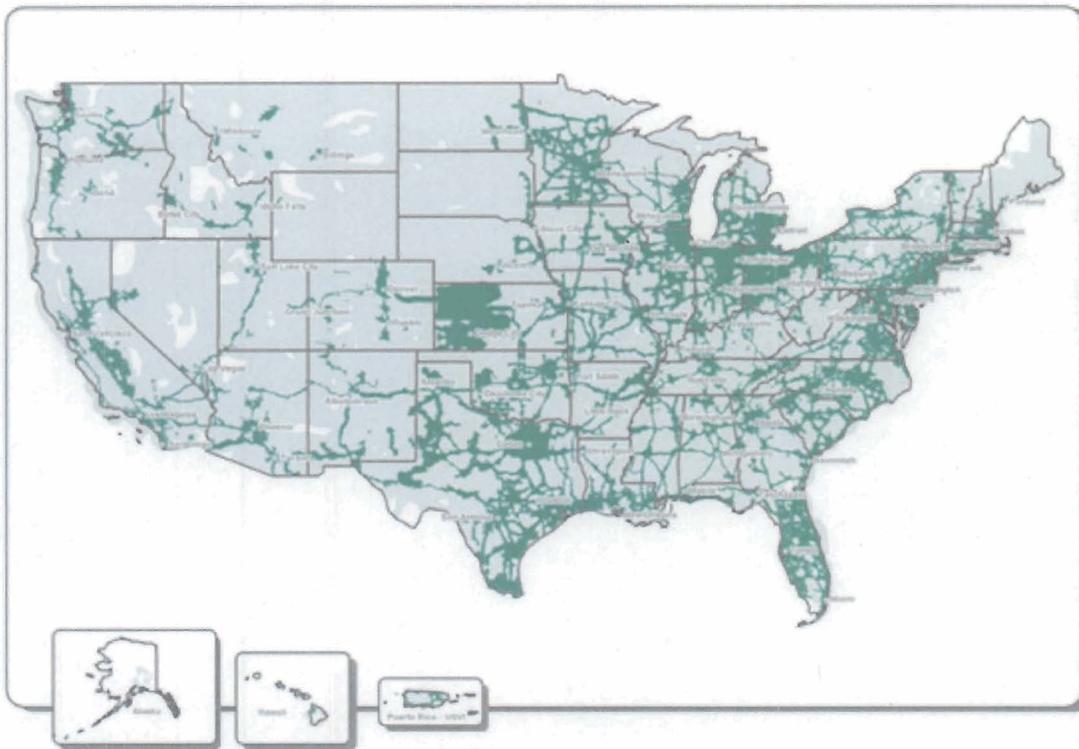
**EXHIBIT 3**  
**Page 29 of 39**

## Nationwide Sprint PCS Network

With Sprint, you have the power to do more with your phone. The ability to use our services and the coverage areas available to you will depend on your phone and the services you sign up for.

The coverage areas depicted below apply to you if:

- You subscribe to a data service that is only available on the Nationwide Sprint PCS Network such as Sprint PCS Ready Link, the Sprint Music Store, etc.
- You have a single band phone that only works on the Nationwide Sprint PCS Network, or have a dual-band phone that works on the Nationwide Sprint PCS Network and in analog voice coverage areas (check to see if this applies to your device).
- Your plan does not include roaming coverage; that is, you are charged for calls made while off the Nationwide Sprint PCS Network.



**Nationwide Sprint PCS Network**

**Analog Voice Coverage**

To take full advantage of Sprint's current network capabilities, you should upgrade your phone. To find out more about new phones, products, and current service plans available shop online now.

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**Important Coverage Information:** Our coverage maps provide high level estimates of our coverage areas when using your device outdoors under optimal conditions. Coverage isn't available everywhere. Estimating wireless coverage and signal strength is not an exact science. There are gaps in coverage within our estimated coverage areas that, along with other factors both within and beyond our control (network problems, software, signal strength, your wireless device, structures, buildings, weather, geography, topography, etc.), will result in dropped and blocked connections, slower data speeds, or otherwise impact the quality of services. Services that rely on location information, such as E911 and GPS navigation, depend on your device's ability to acquire

satellite signals (typically not available indoors) and network coverage. E911 services also depend local emergency service provider systems/support.

---

Print | Close

---

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EXHIBIT 3  
Page 31 of 39

Search by Address | **Search by Intersection** | Search by Landmark

Check if T-Mobile coverage is right for you with Personal Coverage Check

Prepaid and FlexPay coverage map >  
Learn more about T-Mobile's expanded coverage >

Street   
City   
State  Zip 03273

search

clear

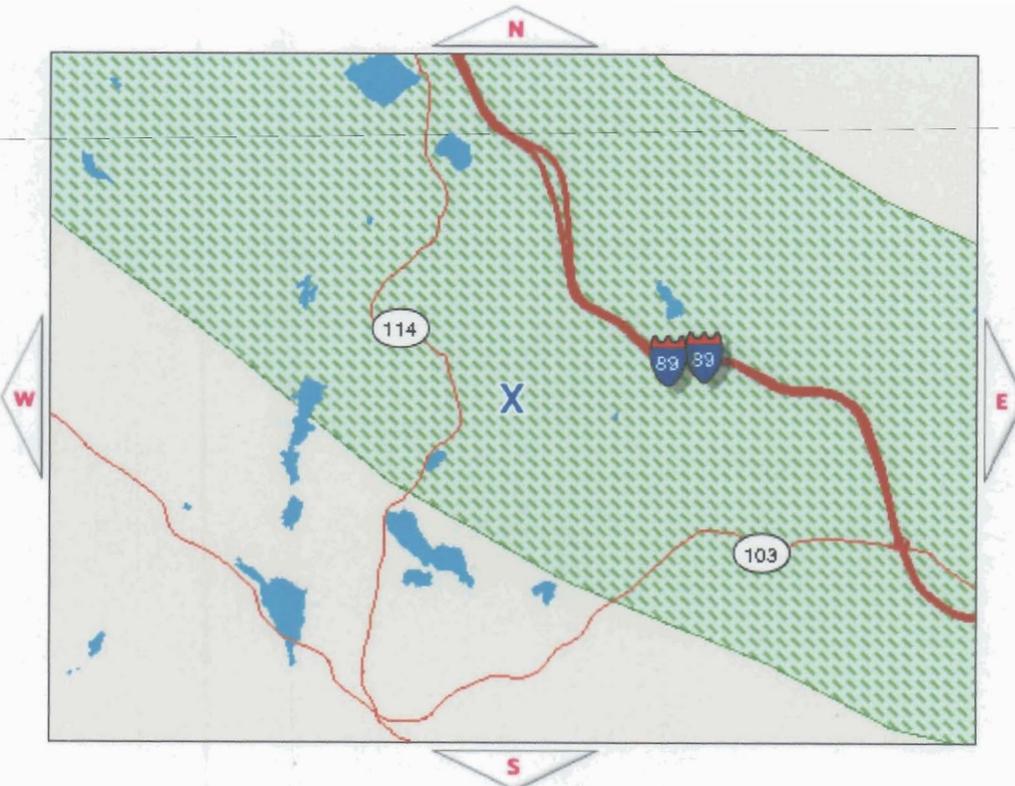
Signal Strength



Zoom In



Zoom Out



Mobile-to-mobile minutes and data services are not available in certain roaming areas included on T-Mobile's coverage maps.

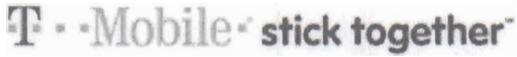
Print

Map Legend

- X Address Location
  - 850 MHz Roaming Coverage
  - T-Mobile Roaming Coverage
  - T-Mobile HotSpot
  - Roaming HotSpot (Additional charges apply)
  - Display
- [Find a T-Mobile HotSpot >](#)

This map predicts and approximates our wireless coverage area outdoors, which may vary from location to location and may change without notice. It may include locations with limited or no coverage. Our maps do not guarantee service availability. Even within a coverage area, there are several factors, such as: network changes, traffic volume, service outages, technical limitations, signal strength, your equipment, terrain, structures, foliage, weather, and other conditions that may interfere with actual service, quality, and availability, including the ability to make, receive, and maintain calls. Multi-band (850/1900 MHz) GSM/GPRS handset required for access to 850 Roaming Coverage. Ask a T-Mobile sales representative or visit [www.t-mobile.com/morecoverage](http://www.t-mobile.com/morecoverage) for more information regarding handset requirements and T-Mobile 850 MHz coverage. 850 MHz roaming is offered through our roaming partners; some features (e.g. picture messaging, mobile to mobile) may not be available while roaming. [Learn more >](#)

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Location: [Change Location](#) | [Store Locator](#)  [Cart](#)

My T-Mobile     
[forgot password?](#) [register](#)

[Phones](#)

[Plans](#)

[Coverage](#)

[Home](#) > [Locator](#)

## See What's Available in Your Area



**T-Mobile does not currently provide service in the 03273 area. However, we are continuously expanding service, so please check back again.**

[View national coverage map](#)

If you believe you have received this message in error, please verify the Zip Code in the message or enter the Zip Code again.

Zip Code:

T-Mobile respects your privacy. We will not share your information with any third-party marketing partners.

EXHIBIT 3  
Page 32 of 39

Search by Address | **Search by Intersection** | Search by Landmark

Check if T-Mobile coverage is right for you with  
Personal Coverage Check

Prepaid and FlexPay coverage map >  
Learn more about T-Mobile's expanded coverage >

Street \_\_\_\_\_  
 City   
 State  Zip

search

clear

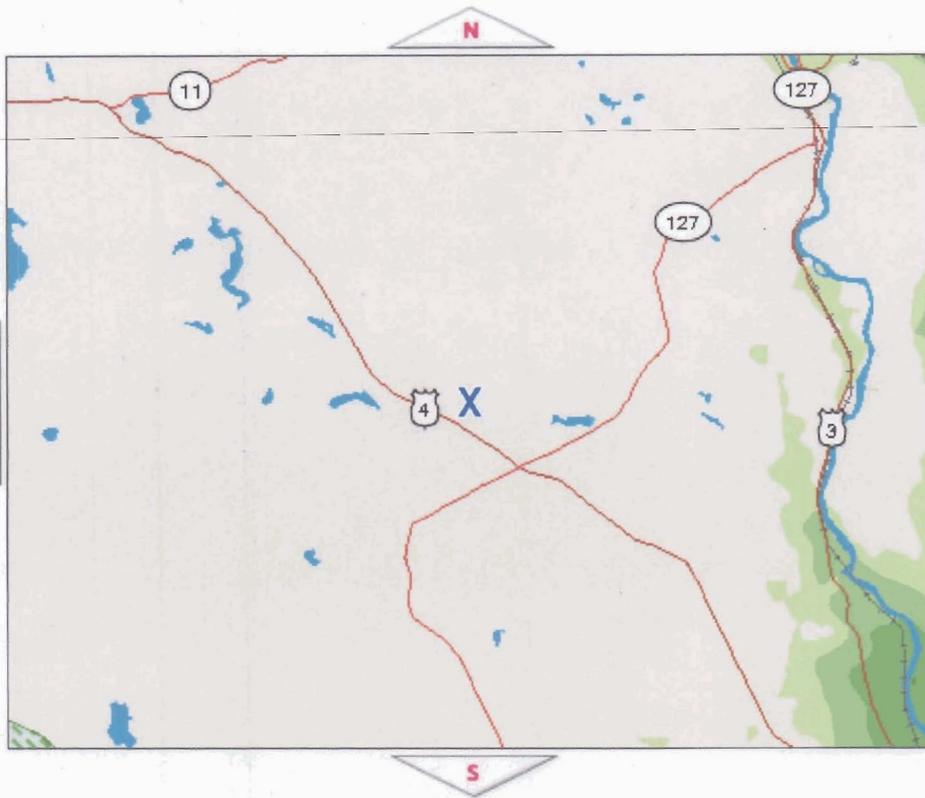
Signal Strength



Zoom In



Zoom Out



Mobile-to-mobile minutes and data services are not available in certain roaming areas included on T-Mobile's coverage maps.

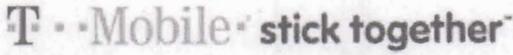
Print

Map Legend

- X Address Location
- 850 MHz Roaming Coverage
- T-Mobile Roaming Coverage
- T-Mobile HotSpot
- Roaming HotSpot (Additional charges apply)
- Find a T-Mobile HotSpot >
- Display

This map predicts and approximates our wireless coverage area outdoors, which may vary from location to location and may change without notice. It may include locations with limited or no coverage. Our maps do not guarantee service availability. Even within a coverage area, there are several factors, such as: network changes, traffic volume, service outages, technical limitations, signal strength, your equipment, terrain, structures, foliage, weather, and other conditions that may interfere with actual service, quality, and availability, including the ability to make, receive, and maintain calls. Multi-band (850/1900 MHz) GSM/GPRS handset required for access to 850 Roaming Coverage. Ask a T-Mobile sales representative or visit [www.t-mobile.com/morecoverage](http://www.t-mobile.com/morecoverage) for more information regarding handset requirements and T-Mobile 850 MHz coverage. 850 MHz roaming is offered through our roaming partners; some features (e.g. picture messaging, mobile to mobile) may not be available while roaming. [Learn more >](#)

55



Location: [Change Location](#) | [Store Locator](#) [Cart](#)

My T-Mobile

[forgot password?](#) | [register](#)

[Phones](#)

[Plans](#)

[Coverage](#)

[Home](#) > [Locator](#)

## See What's Available in Your Area

**EXHIBIT 3**  
**Page 34 of 39**

 **T-Mobile does not currently provide service in the 03268 area. However, we are continuously expanding service, so please check back again.**

[View national coverage map](#)

If you believe you have received this message in error, please verify the Zip Code in the message or enter the Zip Code again.

Zip Code:

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## CTIA Consumer Code for Wireless Service

To provide consumers with information to help them make informed choices when selecting wireless service, to help ensure that consumers understand their wireless service and rate plans, and to continue to provide wireless service that meets consumers' needs, the CTIA and the wireless carriers that are signatories below have developed the following Consumer Code. The carriers that are signatories to this Code have voluntarily adopted the principles, disclosures, and practices here for wireless service provided to individual consumers.

**The wireless carriers that are signatories to this Code will:**

### 1. Disclose rates and terms of service to consumers.

For each rate plan offered to new consumers, wireless carriers will make available to consumers in collateral or other disclosures at point of sale and on their web sites, at least the following information, as applicable: (a) the calling area for the plan; (b) the monthly access fee or base charge; (c) the number of airtime minutes included in the plan; (d) any nights and weekend minutes included in the plan or other differing charges for different time periods and the time periods when nights and weekend minutes or other charges apply; (e) the charges for excess or additional minutes; (f) per-minute long distance charges or whether long distance is included in other rates; (g) per-minute roaming or off-network charges; (h) whether any additional taxes, fees or surcharges apply; (i) the amount or range of any such fees or surcharges that are collected and retained by the carrier; (j) whether a fixed-term contract is required and its duration; (k) any activation or initiation fee; and (l) any early termination fee that applies and the trial period during which no early termination fee will apply.

### 2. Make available maps showing where service is generally available.

Wireless carriers will make available at point of sale and on their web sites maps depicting approximate voice service coverage applicable to each of their rate plans currently offered to consumers. To enable consumers to make comparisons among carriers, these maps will be generated using generally accepted methodologies and standards to depict the carrier's outdoor coverage. All such maps will contain an appropriate legend concerning limitations and/or variations in wireless coverage and map usage, including any geographic limitations on the availability of any services included in the rate plan. Wireless carriers will periodically update such maps as necessary to keep them reasonably current. If necessary to show the extent of service coverage available to customers from carriers' roaming partners, carriers will request and incorporate coverage maps from roaming partners that are generated using similar industry-accepted criteria, or if such information is not available, incorporate publicly available information regarding roaming partners' coverage areas.



**3. Provide contract terms to customers and confirm changes in service.**

When a customer initiates service with a wireless carrier or agrees to a change in service whereby the customer is bound to a contract extension, the carrier will provide or confirm the material terms and conditions of service with the subscriber.

**4. Allow a trial period for new service.**

~~When a customer initiates service with a wireless carrier, the customer will be informed of and given a period of not less than 14 days to try out the service. The carrier will not impose an early termination fee if the customer cancels service within this period, provided that the customer complies with applicable return and/or exchange policies. Other charges, including airtime usage, may still apply.~~

**5. Provide specific disclosures in advertising.**

In advertising of prices for wireless service or devices, wireless carriers will disclose material charges and conditions related to the advertised prices, including if applicable and to the extent the advertising medium reasonably allows: (a) activation or initiation fees; (b) monthly access fees or base charges; (c) any required contract term; (d) early termination fees; (e) the terms and conditions related to receiving a product or service for "free;" (f) the times of any peak and off-peak calling periods; (g) whether different or additional charges apply for calls outside of the carrier's network or outside of designated calling areas; (h) for any rate plan advertised as "nationwide," (or using similar terms), the carrier will have available substantiation for this claim; (i) whether prices or benefits apply only for a limited time or promotional period and, if so, any different fees or charges to be paid for the remainder of the contract term; (ij) whether any additional taxes, fees or surcharges apply; and (j) the amount or range of any such fees or surcharges collected and retained by the carrier.

**6. Separately identify carrier charges from taxes on billing statements.**

On customers' bills, carriers will distinguish (a) monthly charges for service and features, and other charges collected and retained by the carrier, from (b) taxes, fees and other charges collected by the carrier and remitted to federal state or local governments. Carriers will not label cost recovery fees or charges as taxes.

**7. Provide customers the right to terminate service for changes to contract terms.**

Carriers will not modify the material terms of their subscribers' contracts in a manner that is materially adverse to subscribers without providing a reasonable advance notice of a proposed modification and allowing subscribers a time period of not less than 14 days to cancel their contracts with no early termination fee.

**8. Provide ready access to customer service.**

Customers will be provided a toll-free telephone number to access a carrier's customer service during normal business hours. Customer service contact information will be provided to customers online and on billing statements. Each wireless carrier will provide information about how customers can contact the carrier in writing, by toll-free telephone number, via the Internet or otherwise with any inquiries or complaints, and this information will be included, at a minimum, on all billing statements, in written responses to customer inquiries and on carriers' web sites. Each carrier will also make such contact information available, upon request, to any customer calling the carrier's customer service departments.

**9. Promptly respond to consumer inquiries and complaints received from government agencies.**

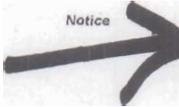
Wireless carriers will respond in writing to state or federal administrative agencies within 30 days of receiving written consumer complaints from any such agency.

**10. Abide by policies for protection of customer privacy.**

Each wireless carrier will abide by a policy regarding the privacy of customer information in accordance with applicable federal and state laws, and will make available to the public its privacy policy concerning information collected online.

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