

Wind Power GeoPlanner™

Land Mobile and Emergency Services Report

Big Blue



Prepared on Behalf of
Exergy Development
Group

September 10, 2010



COMSEARCH
A CommScope Company

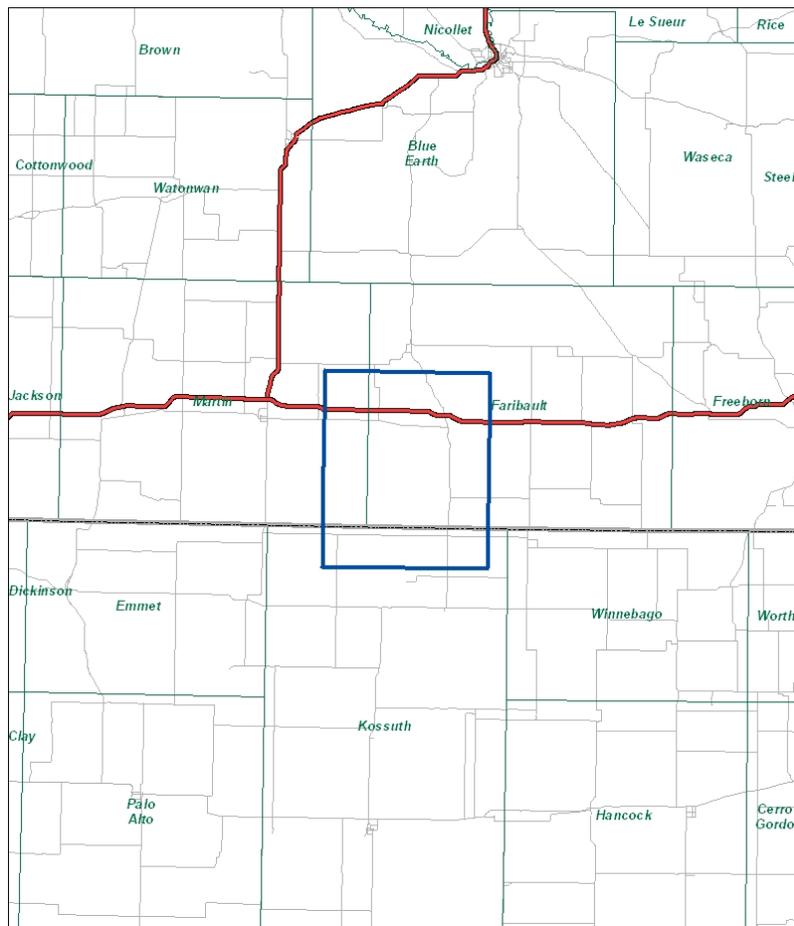


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1. Introduction

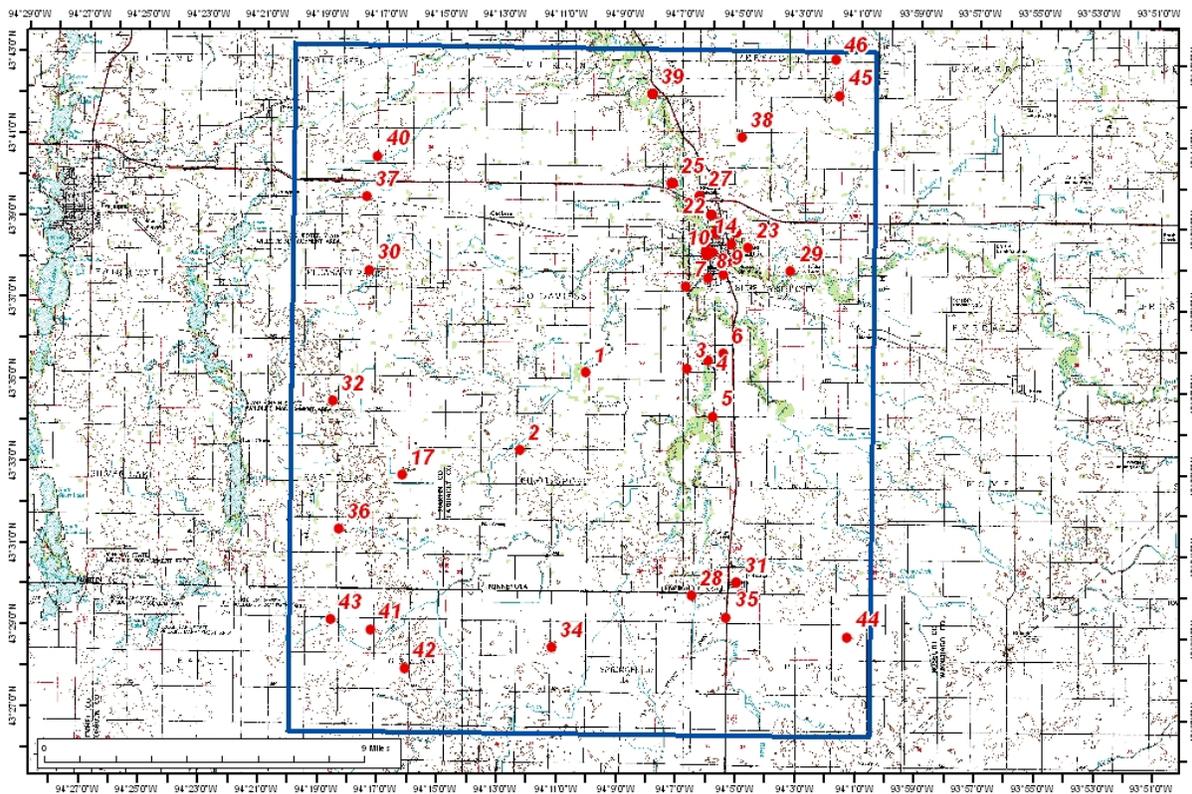
On behalf of Exergy Development Group, Comsearch completed an assessment of the emergency services in the Big Blue project area to identify any potential impacts from the planned turbines. We evaluated the registered frequencies for the following types of first responder entities: police, fire, emergency medical services, emergency management, hospitals, public works, transportation and other state, county, and municipal agencies. We also identified all industrial and business land mobile radio (LMR) systems and commercial E911 operators within the proposed wind energy facility boundaries. This information is useful in the planning stages of the wind energy facilities because the data can be used in support of the wind energy facilities communications needs and to evaluate any potential impact to the emergency services provided in that region. An overview of the Big Blue project area, which is located in Martin and Faribault Counties, Minnesota and Kossuth County, Iowa, appears below.



2. Summary of Results

Methodology & Results

Our land mobile and emergency services incumbent data was derived from the FCC's Universal Licensing System (ULS) and the FCC's Public Safety & Homeland Security bureau. We identified both site-based licenses as well as regional area-wide licenses designated for public safety use. The site-based licenses were imported into GIS software and geographically mapped within the wind energy area of interest defined by the customer. Each site on the map was identified with an ID number associated with site information provided in a data table. A depiction of the fixed site licenses in the project area appears in Figure 1 below.



Exergy Development Group
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● Land Mobile Radio Sites
□ Area of Interest



Figure 1: Land Mobile Sites in the Area of Interest

Site-based licenses

Figure 1 identifies 46 unique site-based licenses within the project area of interest. Specific information about these sites is provided in Table 1 including location coordinates, frequency band, antenna height above ground level, and licensee name. In this particular project area, the majority of the sites near the project area are licensed to industrial and business entities. The first responder entities that provide critical public safety and emergency communications to the Big Blue project area include the City of Blue Earth, City of Elmore, County of Faribault, and United Hospital.

| ID | Callsign | Frequency Band (MHz) | Licensee | Antenna Height AGL (m) | City | ST | Latitude (NAD83) | Longitude (NAD83) |
|----|----------|----------------------|--|------------------------|------------|----|------------------|-------------------|
| 1 | WQKH357 | 450-470 | Benz, Clinton | 12.2 | Blue Earth | MN | 43.589389 | -94.169333 |
| 2 | WNRG780 | 450-470 | Smith, Scott | 12.0 | Elmore | MN | 43.557444 | -94.205250 |
| 3 | WNPF878 | 450-470 | Haase, Kenneth | 15.0 | Blue Earth | MN | 43.591611 | -94.112750 |
| 4 | KNBY305 | 150-174 | Krieger, Allan | 15.0 | Blue Earth | MN | 43.595222 | -94.101083 |
| 5 | WGK500 | 150-174 | Great River Energy | 3.0 | Blue Earth | MN | 43.572167 | -94.098028 |
| 6 | WNMG475 | 800/900 | Steier, Tim | 11.0 | Blue Earth | MN | 43.597722 | -94.092750 |
| 7 | WNQN996 | 150-174 | Blue Earth, City Of | 10.0 | Blue Earth | MN | 43.624944 | -94.114139 |
| 8 | KNCP898 | 150-174 | Ehrich, Gary | 7.0 | Blue Earth | MN | 43.628278 | -94.101639 |
| 9 | KNJF916 | 450-470 | Mores Ag Center Inc | 35.0 | Blue Earth | MN | 43.629944 | -94.092750 |
| 10 | WXU894 | 450-470 | Blue Earth, City Of | 26.0 | Blue Earth | MN | 43.637722 | -94.102472 |
| 11 | WQA825 | 150-174 | Blue Earth, City Of | 8.0 | Blue Earth | MN | 43.639667 | -94.103028 |
| 12 | WNQN996 | 150-174 | Blue Earth, City Of | 23.0 | Blue Earth | MN | 43.638833 | -94.101639 |
| 13 | WXT708 | 150-174 | Blue Earth Public School District 6059 | 15.0 | Blue Earth | MN | 43.639111 | -94.099417 |
| 14 | KXQ897 | 450-470 | Faribault, County Of | 21.0 | Blue Earth | MN | 43.642444 | -94.103306 |
| 15 | WNYF633 | 450-470 | Moore, Mark | 15.0 | Blue Earth | MN | 43.635222 | -94.090528 |
| 16 | WNIV249 | 450-470 | Seneca Foods Corporation | 12.0 | Blue Earth | MN | 43.637167 | -94.092750 |
| 17 | WNWT719 | 450-470 | Jensen, Russell | 29.0 | Blue Earth | MN | 43.546611 | -94.271083 |
| 18 | KRV406 | 150-174 | United Hospital | 46.0 | Blue Earth | MN | 43.646889 | -94.097750 |
| 19 | KNAW929 | 150-174 | Kriewall, Fritz | 18.0 | Blue Earth | MN | 43.642722 | -94.088861 |
| 20 | WNQJ877 | 450-470 | Ehrich, Duane | 91.0 | Blue Earth | MN | 43.648556 | -94.096083 |
| 20 | WNLI487 | 450-470 | Lawrence, Wayne | 91.0 | Blue Earth | MN | 43.648556 | -94.096083 |
| 21 | WNQN996 | 150-174 | Blue Earth, City Of | 10.0 | Blue Earth | MN | 43.651333 | -94.094694 |
| 22 | WNKA403 | 150-174 | Faribault, County Of | 16.0 | Blue Earth | MN | 43.654500 | -94.100194 |
| 22 | WQKR470 | 800/900 | Minnesota, State Of | 104.3 | Blue Earth | MN | 43.654500 | -94.100194 |
| 23 | KXQ741 | 150-174 | Faribault, County Of | 12.0 | Blue Earth | MN | 43.641056 | -94.079417 |
| 24 | WNKA403 | 150-174 | Faribault, County Of | 41.0 | Blue Earth | MN | 43.647167 | -94.086361 |
| 24 | KXQ897 | 150-174 | Faribault, County Of | 41.0 | Blue Earth | MN | 43.647167 | -94.086361 |



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| ID | Callsign | Frequency Band (MHz) | Licensee | Antenna Height AGL (m) | City | ST | Latitude (NAD83) | Longitude (NAD83) |
|----|----------|----------------------|--|------------------------|------------|----|------------------|-------------------|
| 24 | KXQ741 | 150-174 | Faribault, County Of | 41.0 | Blue Earth | MN | 43.647167 | -94.086361 |
| 25 | WPXD491 | 800/900 | 21st Century Wireless Group | 102.0 | Blue Earth | MN | 43.666944 | -94.122222 |
| 25 | WPGA248 | 150-174 | Alpha Wireless Communications | 85.0 | Blue Earth | MN | 43.666889 | -94.122194 |
| 25 | WPQB449 | 450-470 | Alpha Wireless Communications | 117.0 | Blue Earth | MN | 43.666889 | -94.122194 |
| 25 | WPET504 | 450-470 | Alpha Wireless Communications | 85.0 | Blue Earth | MN | 43.666889 | -94.122194 |
| 25 | WPDU983 | 800/900 | Alpha Wireless Communications | 119.0 | Blue Earth | MN | 43.666944 | -94.122222 |
| 25 | WPPX390 | 800/900 | Alpha Wireless Communications | 119.0 | Blue Earth | MN | 43.666889 | -94.122472 |
| 25 | WPXS349 | 800/900 | Faribault, County Of | 119.0 | Blue Earth | MN | 43.666944 | -94.122222 |
| 25 | KNRV451 | 800/900 | Nextel | 117.0 | Blue Earth | MN | 43.666889 | -94.122194 |
| 25 | WPQW848 | 800/900 | Nextel | 117.0 | Blue Earth | MN | 43.666889 | -94.122194 |
| 25 | WPXD319 | 800/900 | Weerts Construction, Inc. | 102.0 | Blue Earth | MN | 43.666944 | -94.122222 |
| 27 | WXT708 | 150-174 | Blue Earth Public School District 6059 | 18.0 | Blue Earth | MN | 43.661889 | -94.106639 |
| 28 | WQY648 | 450-470 | Beenken, Eldon M | 28.0 | Elmore | IA | 43.499111 | -94.108583 |
| 29 | WNPV224 | 150-174 | St Lukes Lutheran Care Center | 14.0 | Blue Earth | MN | 43.631611 | -94.055222 |
| 30 | WNKU344 | 450-470 | Snyder Jr, Donald R | 23.0 | Guckeen | MN | 43.629944 | -94.291361 |
| 31 | WSV417 | 150-174 | Elmore, City Of | 15.0 | Elmore | MN | 43.504667 | -94.083583 |
| 32 | WPVA685 | 450-470 | Hugoson, Kevin | 18.0 | Granada | MN | 43.576333 | -94.310806 |
| 33 | KQB938 | 150-174 | Coy, Lester L | 18.0 | Elmore | MN | 43.499944 | -94.080806 |
| 34 | WPCC625 | 450-470 | Lofstrom, William | 53.0 | Ledyard | IA | 43.477167 | -94.186083 |
| 35 | KQB938 | 150-174 | Coy, Lester L | 20.0 | Elmore | MN | 43.490500 | -94.088861 |
| 36 | WQKD410 | 450-470 | Thompson, Todd | 22.0 | Elmore | MN | 43.524250 | -94.306167 |
| 37 | WNNF787 | 450-470 | Saxton, Calvin | 34.0 | Guckeen | MN | 43.659944 | -94.293306 |
| 38 | KYL958 | 150-174 | Millmann, Brian P | 14.0 | Delavan | MN | 43.686056 | -94.083583 |
| 39 | WPAR826 | 450-470 | Blue Earth Valley Comunciations | 91.0 | Blue Earth | MN | 43.703278 | -94.133861 |
| 39 | WNDE495 | 450-470 | Blue Earth Valley Comunciations | 70.0 | Blue Earth | MN | 43.703278 | -94.133861 |
| 39 | KLN459 | 450-470 | Blue Earth Valley Comunciations | 85.0 | Blue Earth | MN | 43.703278 | -94.133861 |
| 39 | WNFQ872 | 150-174 | Darling International Inc | 61.0 | Blue Earth | MN | 43.703278 | -94.133861 |
| 39 | WPLA315 | 800/900 | Nextel | 55.0 | Blue Earth | MN | 43.703278 | -94.133861 |
| 39 | WPQW874 | 800/900 | Nextel | 55.0 | Blue Earth | MN | 43.703278 | -94.133861 |
| 39 | WNWE903 | 450-470 | Schonrock, Steven W | 79.0 | Blue Earth | MN | 43.703278 | -94.133861 |
| 39 | WNZF481 | 450-470 | Winch, Thomas R | 79.0 | Blue Earth | MN | 43.703278 | -94.133861 |
| 40 | WNLX513 | 450-470 | Gronewald, Ann M | 37.0 | Granada | MN | 43.676333 | -94.287472 |
| 41 | KNNP437 | 450-470 | Farland, Roger | 17.0 | Swea City | IA | 43.483556 | -94.287750 |
| 42 | WNMG687 | 450-470 | Mino, Kendall R | 14.0 | Ledyard | IA | 43.468000 | -94.268306 |
| 43 | KNCW355 | 150-174 | Meyer, Edgar | 24.0 | Armstrong | IA | 43.487444 | -94.309972 |

| ID | Callsign | Frequency Band (MHz) | Licensee | Antenna Height AGL (m) | City | ST | Latitude (NAD83) | Longitude (NAD83) |
|----|----------|----------------------|------------------------|------------------------|------------|----|------------------|-------------------|
| 44 | WNBM984 | 450-470 | Willmert Farms Inc | 25.0 | Lakota | IA | 43.483000 | -94.021056 |
| 45 | KXQ741 | 150-174 | Faribault, County Of | 119.0 | Blue Earth | MN | 43.703556 | -94.028833 |
| 46 | WNQM439 | 450-470 | Willette Seed Farm Inc | 30.0 | Delavan | MN | 43.718278 | -94.031333 |

Table 1: Summary of Land Mobile Sites within Area of Interest

In addition to the licenses listed in Table 1, there are a few public safety entities that have fixed sites located outside the search area but their mobile operations may be inside the area of interest. Information on those entities within 10 miles of the project area is provided in Table 2.

| ID | Callsign | Frequency Band (MHz) | Licensee | Entity Type | Distance to edge of AOI (mi) |
|----|----------|----------------------|---------------------|-------------|------------------------------|
| 1 | WPOY964 | 450-470 | BLUE EARTH, CITY OF | Utilities | 5.04 |
| 2 | WPCP692 | 150-174 | ELMORE, CITY OF | Utilities | 6.92 |

Table 2: Summary of Public Safety Services outside Area of Interest

Area-wide licenses

The regional area-wide licenses are compiled from FCC data sources and identified for each county in the wind project area. The Big Blue project is located primarily in Martin and Faribault Counties, Minnesota, part of public safety Region #22, which contains all of the counties in the state of Minnesota. The regional public safety operation is overseen by the entity listed below.

Scott Wiggins
Chairperson
Director, Emergency Communications Networks
445 Minnesota Street, Suite 137
St. Paul, MN 55101-5137
phone: 651-201-7546
mobile: 651-983-9306
email: Scott.wiggins@state.mn.us

The Big Blue project also overlaps a portion of Kossuth County, Iowa, part of public safety Region #15, which contains all of the counties in the state of Iowa. The regional public safety operation is overseen by the entity listed below.

Mr. Leslie E. Fish
Chairperson
5912 NW 2nd St.
Des Moines, IA 50313-1307
phone: 515-281-8804

The chairpersons for Regions #15 and #22 are representatives for all public safety entities in the region and are responsible for coordinating current and future public safety use in the wireless spectrum. In the bands licensed by the FCC for area-wide first responders, which includes 220 MHz, 700 MHz, 800 MHz and 4.9 GHz as well as the traditional Part 90 public safety pool of frequencies, ten licenses were found for the state of Minnesota, six licenses were found for the state of Iowa, and one license was found for each county (see Table 3). These area-wide licenses are designated for mobile use only.

| ID | Frequency Band (MHz) | Licensee | Area of Operation |
|----|--|---|----------------------------|
| 1 | 769-775/799-805 | State of Minnesota (WPTZ762) | Statewide: Minnesota |
| 2 | 769-775/799-805 | State of Minnesota (WPTZ782) | Statewide: Iowa |
| 3 | 4940-4990 | State of Minnesota (WPZI764) | Statewide: Minnesota |
| 4 | 25-50, 150-174 | American National Red Cross | Statewide: Minnesota |
| 5 | 150-174 | CART Ambulance Inc | Statewide: Minnesota |
| 6 | 150-174 | County of Faribault | Countywide: Faribault |
| 7 | 150-174, 450-470 | County of Kossuth | Countywide: Kossuth |
| 8 | 150-174 | County of Martin | Countywide: Martin |
| 9 | 450-470 | Greater Northwest Emergency Medical Services | Statewide: Minnesota |
| 10 | 150-174 | Iowa Search and Rescue | Statewide: Iowa |
| 11 | 150-174 | National Ski Patrol System Inc | Statewide: Minnesota, Iowa |
| 12 | 150-174 | Northstar Search and Rescue Dog Assoc Inc | Statewide: Minnesota |
| 13 | 150-174 | South Central EMS Joint Powers Board | Statewide: Minnesota |
| 14 | 150-174 | Southern Minnesota Canine Search & Rescue Inc | Statewide: Minnesota |
| 15 | 150-174 | Star 1 Search and Rescue | Statewide: Iowa |
| 16 | 150-174, 450-470, 800/900, 2466 | State of Iowa | Statewide: Iowa |
| 17 | 25-50, 150-174, 450-470, 800/900, 2459 | State of Minnesota | Statewide: Minnesota |
| 18 | 150-174 | University of Iowa Hospitals and Clinics | Statewide: Iowa |

Table 3: Summary of Regional Licenses

E911 Operators

Wireless operators are granted area-wide licenses from the FCC to deploy their cellular networks, which often include handsets with E911 capabilities. Since mobile phone market boundaries differ from service to service, we disaggregated the carriers' licensed areas down to the county level. We have identified the type of service, channel block, market ID and FCC callsign for each carrier in the three counties in Table 4 below.

| Service ¹ | Mobile Phone Carrier | County | ST |
|----------------------|------------------------------|-------------------------------|--------|
| AWS / CELL / PCS | AT&T | Faribault and Martin, Kossuth | MN, IA |
| AWS | Cricket | Faribault and Martin, Kossuth | MN, IA |
| AWS | FMTC Wireless | Kossuth | IA |
| PCS | FWC Communications | Kossuth | IA |
| AWS | LCDW Wireless (Lonsdale Tel) | Faribault | MN |
| AWS | Long Lines Wireless | Martin | MN |
| PCS | Long Lines Wireless | Kossuth | IA |
| PCS | Skylink | Kossuth | IA |
| AWS | SpectrumCo | Faribault and Martin, Kossuth | MN, IA |
| PCS | Sprint Nextel | Faribault and Martin, Kossuth | MN, IA |
| AWS / PCS | T-Mobile | Faribault and Martin, Kossuth | MN, IA |
| CELL / PCS | US Cellular | Kossuth | IA |
| AWS / CELL / PCS | Verizon Wireless | Faribault and Martin, Kossuth | MN, IA |

Table 4: Mobile Phone Carriers in the Area of Interest with potential E911 Service

Recommendations

The first responder, industrial/business land mobile sites, area-wide public safety, and commercial E-911 communications as described in this report are typically unaffected by the presence of wind turbines and we do not anticipate any significant harmful effect to these services in the Big Blue project area. The frequencies of operation for these services have characteristics that allow the signal to propagate through wind turbines. As a result, very little, if any, change in their coverage should occur when the wind turbines are installed.

When planning the wind energy turbine locations in the area of interest, a conservative approach would dictate not locating any turbines within 50 meters of land mobile fixed base stations to avoid any possible impact to the communications services provided by these

¹ AWS: Advanced Wireless Service at 1.7/2.1 GHz
CELL: Cellular Service at 800 MHz
PCS: Personal Communication Service at 1.9 GHz

stations. This distance is based on FCC interference emissions from electrical devices in the land mobile frequency bands. There are forty-six fixed base station locations in the Big Blue project area (see Table 1), and they are mostly licensed to non-emergency entities. Approximately fifteen sites are licensed to first responder entities in the Big Blue project area. The area-wide public safety licenses are either located sufficiently far outside the project area or are licensed for mobile-only use. As long as the proposed turbines are more than 50 meters from any fixed base stations, they should not interfere with the land mobile stations.

In the unlikely event that a public safety entity believes their coverage has been compromised by the presence of the wind energy facility, they have many options to improve their signal coverage to the area through optimization of a nearby base station or even adding a repeater site. Utility towers, meteorological towers or even the turbine towers within the wind project area can serve as the platform for a base station or repeater site.



3. Contact Us

For questions or information regarding the Emergency Services Report, please contact:

| | |
|-----------------|--|
| Contact person: | Denise Finney |
| Title: | Account Manager |
| Company: | Comsearch |
| Address: | 19700 Janelia Farm Blvd., Ashburn, VA 20147 |
| Telephone: | 703-726-5650 |
| Fax: | 703-726-5595 |
| Email: | dfinney@comsearch.com |
| Web site: | www.comsearch.com |