



Executive Summary – Wind Power GeoPlanner™

Licensed Microwave Search & Worst Case Fresnel Zone

Comsearch performed an analysis to evaluate the potential effect of the planned Alabama Ledge Wind Farm in Genesee County, New York on existing non-Federal Government microwave telecom systems.

Microwave Search Results: Comsearch’s Wind Power GeoPlanner™ provides a graphical representation of affected microwave paths and provides supporting technical parameters. The microwave path data is overlaid on topographic basemaps. Comsearch identified 3 microwave paths that intersect the project area (see Figure 1 and Table 1 below).

Comsearch then calculated a Worst Case Fresnel Zone (WCFZ) for each microwave path in the project area. The mid-point of a full microwave path is the location where the widest (or worst case) Fresnel zone occurs. Fresnel zones are calculated for each path using the following formula.

$$R_n \cong 17.3 \sqrt{\frac{n}{F_{GHz}} \left(\frac{d_1 d_2}{d_1 + d_2} \right)}$$

Where,

R_n = First Fresnel Zone Radius, meters

n = Number 1 (For first Fresnel Zone)

F_{GHz} = Frequency of the Microwave Link, GHz

d_1 = Distance from First Microwave Station to Wind Turbine, km

d_2 = Distance from Second Microwave Station to Wind Turbine, km

Note: WCFZ exists where $d_1 = d_2$

The calculated WCFZ radius, giving the linear path an area or swath, buffers each microwave path in the project area. The distance unit is in meters and can be found in the column attribute “WCFZ.” In general, this is the XY area where the planned wind turbines should be avoided, if possible. These areas are shown in Figures 2 and 3.

None of 3 microwave paths were identified to have a potential XY conflict with respect to the proposed turbines.

Turbines: 68 turbines were considered in the analysis, each with 88 meters diameter. The coordinates provided were in NAD83, which is consistent with the datum of our GeoPlanner™ application.



**Tetra Tech EC, Inc.
Alabama Ledge Wind Farm**

Map Projection: The ESRI® Shapefiles contained in the enclosed GeoPlanner CD are in NAD 83 UTM Zone 17 projected coordinate system.

Comsearch Contact:

Denise Finney, Account Manager
Phone: (703) 726-5650 Fax: (703) 726-5599
Email: dfinney@comsearch.com

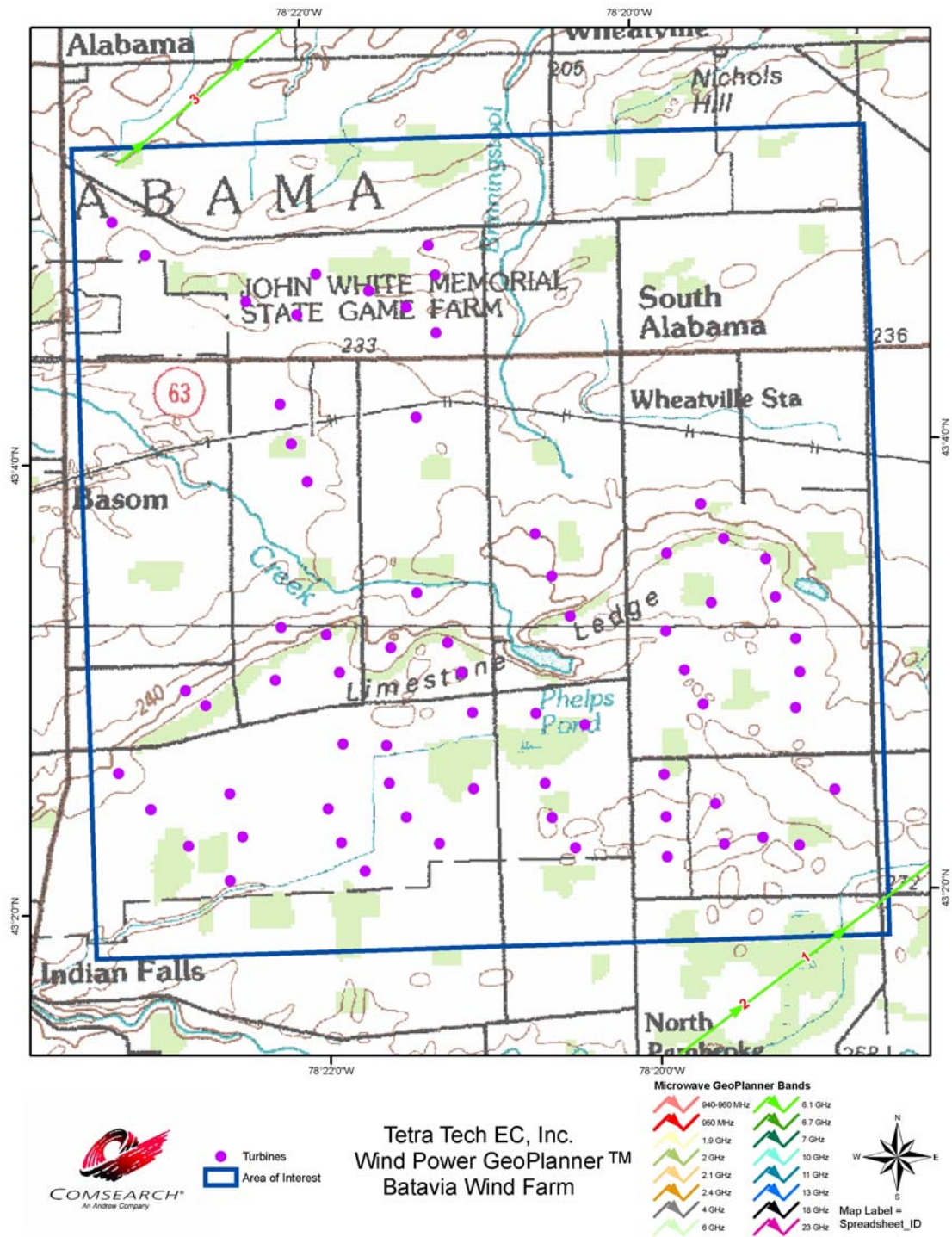


Figure 1 – Wind Power GeoPlanner™

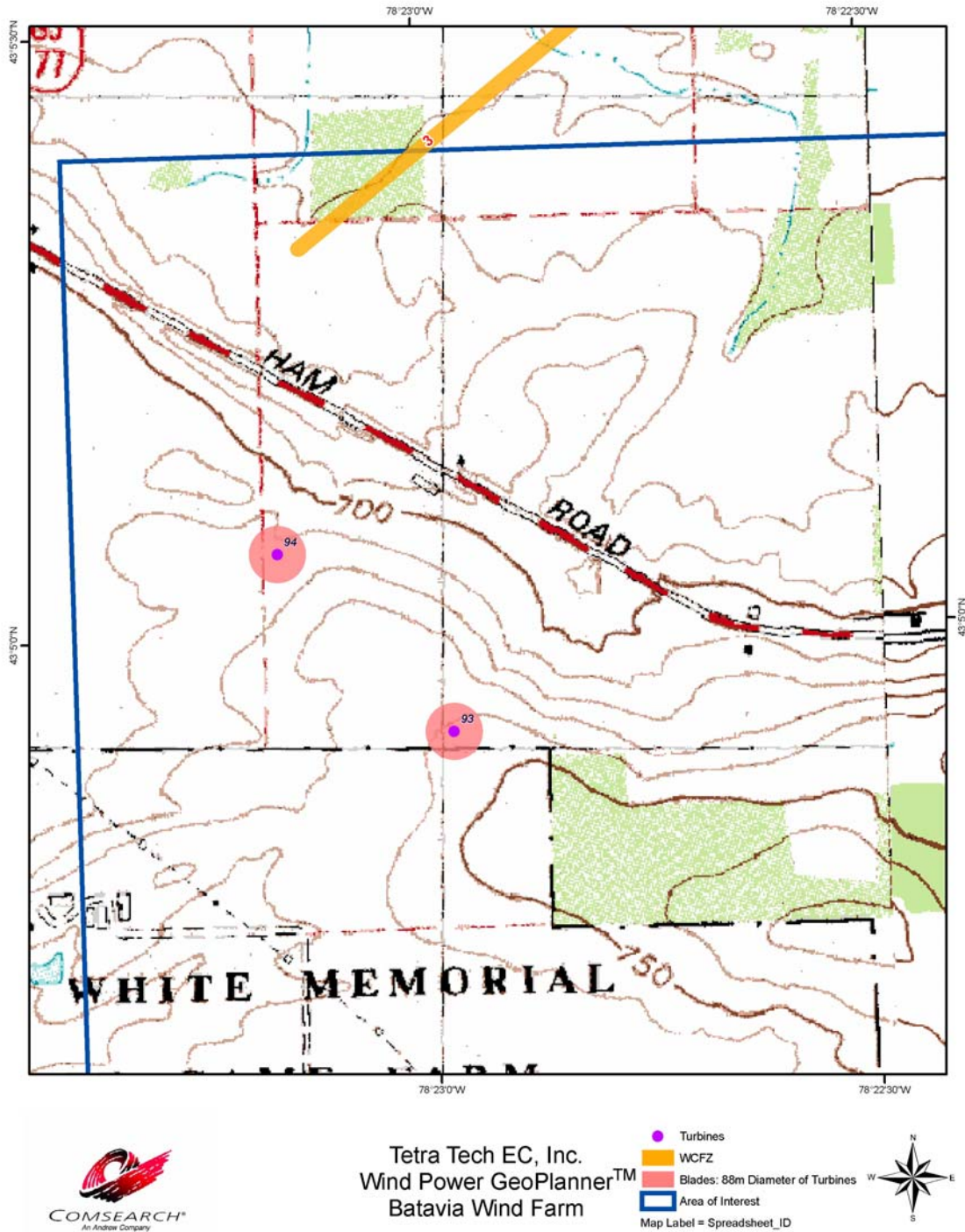
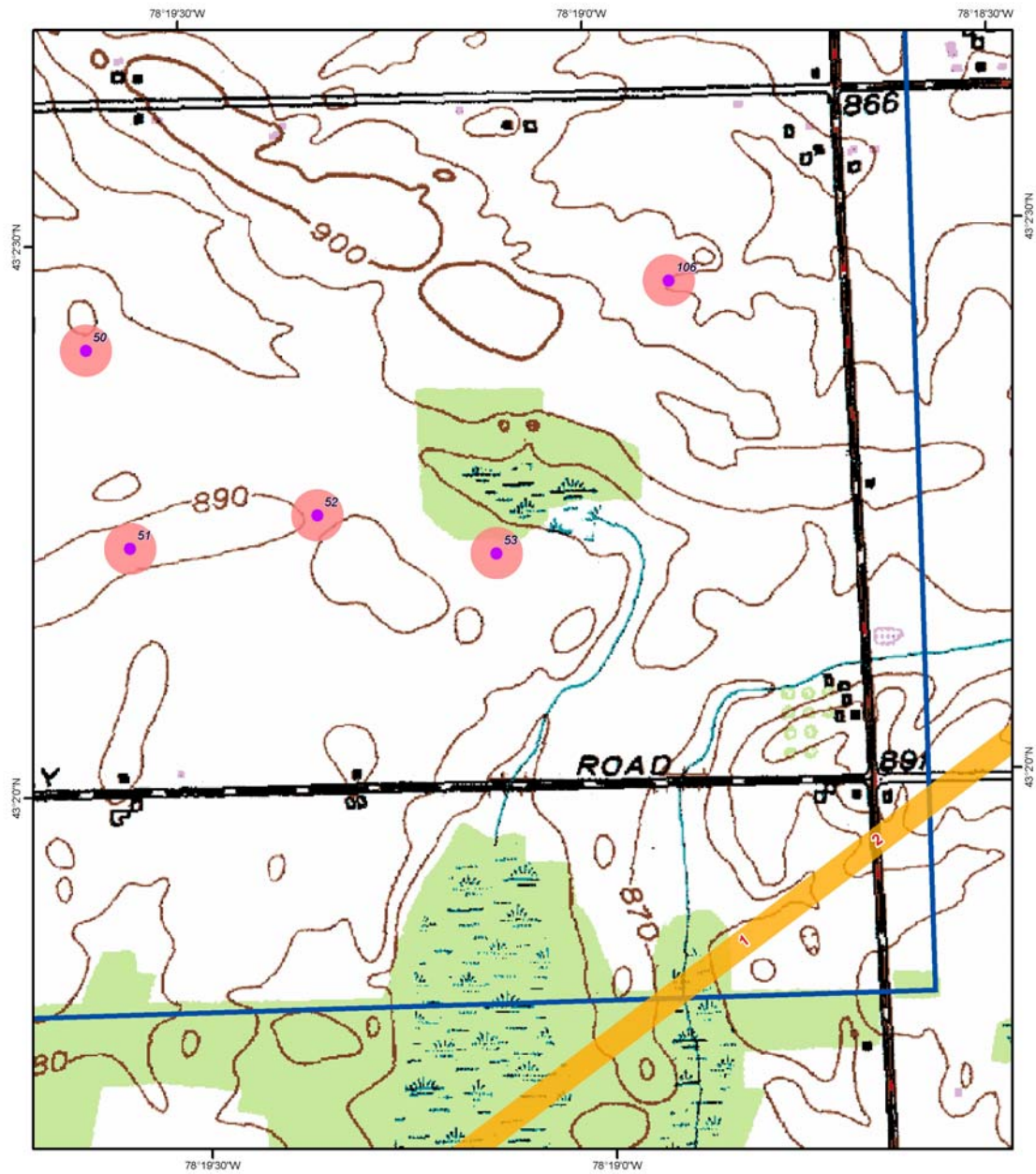


Figure 2 – Wind Power GeoPlanner™ & WCFZ



Tetra Tech EC, Inc.
Wind Power GeoPlanner™
Batavia Wind Farm

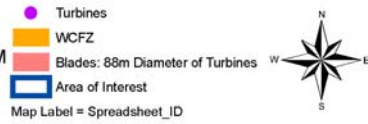


Figure 3 – Wind Power GeoPlanner™ & WCFZ



ID	Site 1	Site 2	Call Sign 1	Call Sign 2	Frequency Band	Licensee	WCFZ (m)
1	PEMBROKE	SWEDEN	WHO339	WKL999	Lower 6 GHz	Global Crossing North America, Inc.	21.88
2	PEMBROKE	SWEDEN	WHO339	WKL999	Lower 6 GHz	Global Crossing North America, Inc.	21.88
3	ALABAMA	SHELBY	WQEQ312	WQEQ248	Lower 6 GHz	New York RSA #3 Cellular Partner	12.10

**Table 1 – Microwave GeoPlanner Links Considered in Analysis
(See enclosed *mw_geopl.xls* for more detailed information and
GP_dict_matrix_description.xls for field description)**