

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before May 26, 2012. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted in triplicate to the Manager, Airspace Regulations & ATC Procedures Group, Federal Aviation Administration, Airspace Regulations & ATC Procedures Group, 800 Independence Ave, SW, Room 423, Washington, DC 20591.

This determination becomes final on June 05, 2012 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Airspace Regulations & ATC Procedures Group via telephone -- 202-267-8783 - or facsimile 202-267-9328.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Michael Blaich, at (404) 305-7081. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2012-WTE-1938-OE.

Signature Control No: 162066709-163504267

(DNH)

Sheri Edgett-Baron

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Map(s)

The proposed construction would be located approximately 3.87 nautical miles (NM) east of the Grimes Field Airport (I74). It would exceed the Obstruction Standards of Title 14, Code of Federal Regulations (14 CFR), Part 77 as follows:

Section 77.17(a)(2) by 207 feet - a height that exceeds 285 feet above ground level within 3.87 NM as applied to I74.

The proposal was not circularized for public comment because current FAA obstruction evaluation policy exempts from circularization those proposals that exceed the above cited obstruction standard. This is provided the proposal does not lie within an airport traffic pattern. This policy does not affect the public's right to petition for review determinations regarding structures, which exceed the subject obstruction standards.

AERONAUTICAL STUDY FOR POSSIBLE INSTRUMENT FLIGHT RULES (IFR) EFFECT DISCLOSED THE FOLLOWING:

- > The proposed structure would have no effect on any existing or proposed IFR arrival/departure routes, operations, or procedures.
- > The proposed structure would have no effect on any existing or proposed IFR en route routes, operations, or procedures.
- > The proposed structure would have no effect on any existing or proposed IFR minimum flight altitudes.

AERONAUTICAL STUDY FOR POSSIBLE VISUAL FLIGHT RULES (VFR) EFFECT DISCLOSED THE FOLLOWING:

- > The proposed structure would have no effect on any existing or proposed VFR arrival or departure routes, operations or procedures.
- > The proposed structure would not conflict with airspace required to conduct normal VFR traffic pattern operations at any known public use or military airports.
- > The proposed structure would not penetrate those altitudes normally considered available to airmen for VFR en route flight.
- > The proposed structure will be appropriately obstruction marked and lighted to make it more conspicuous to airmen flying in VFR weather conditions at night.

The cumulative impact of the proposed structure, when combined with other existing structures is not considered significant. Study did not disclose any adverse effect on existing or proposed public-use or military airports or navigational facilities. Nor would the proposal affect the capacity of any known existing or planned public-use or military airport.

Therefore, it is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation.

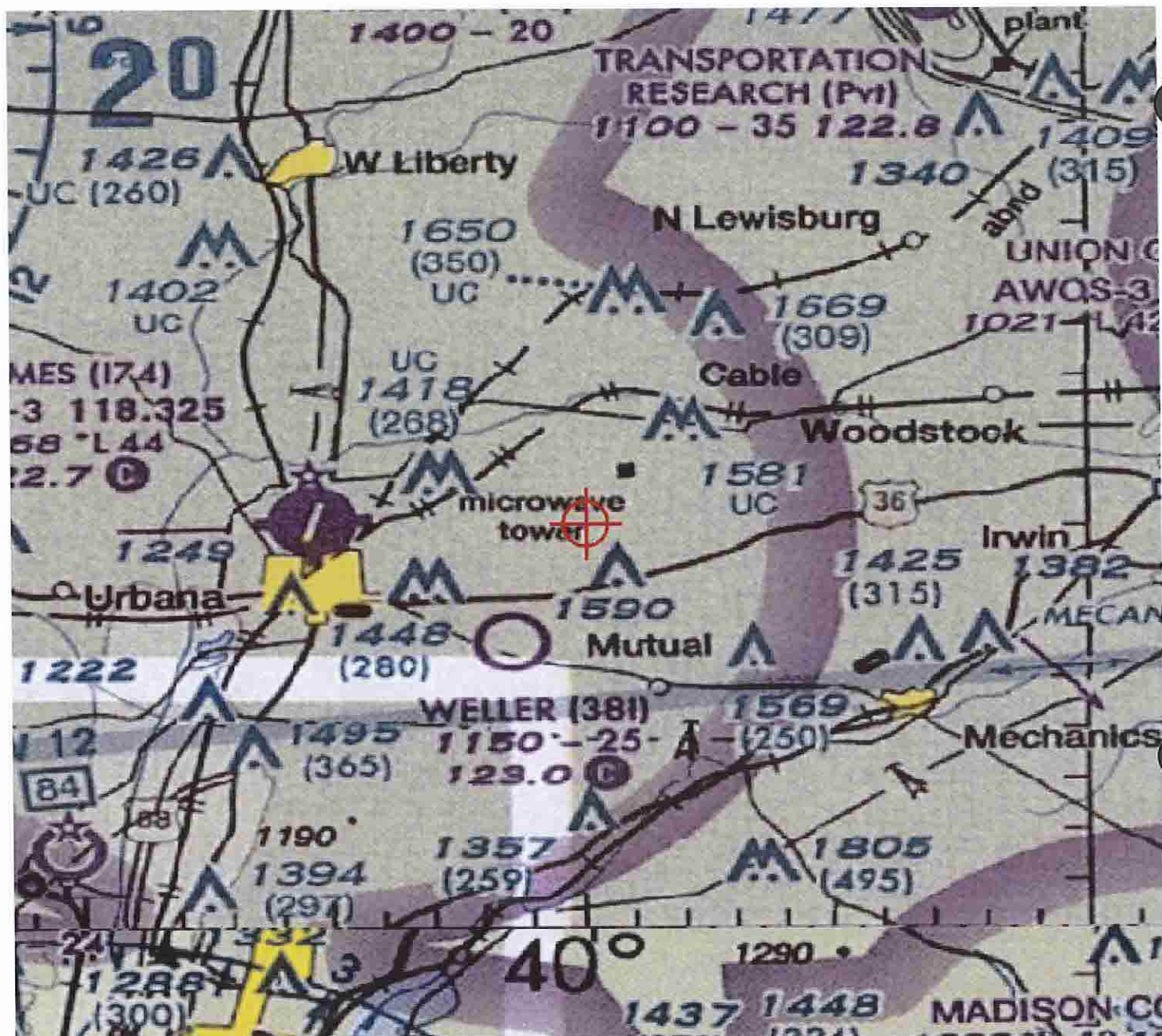


Exhibit T
Communication Studies

1. The purpose of this study is to investigate the relationship between communication and social media use.

2. The study is a quantitative research design.

3. The study is a cross-sectional study.

EXHIBIT T

Communication Studies

Off-Air Television Analysis

AM/FM Analysis

Licensed Microwave Report

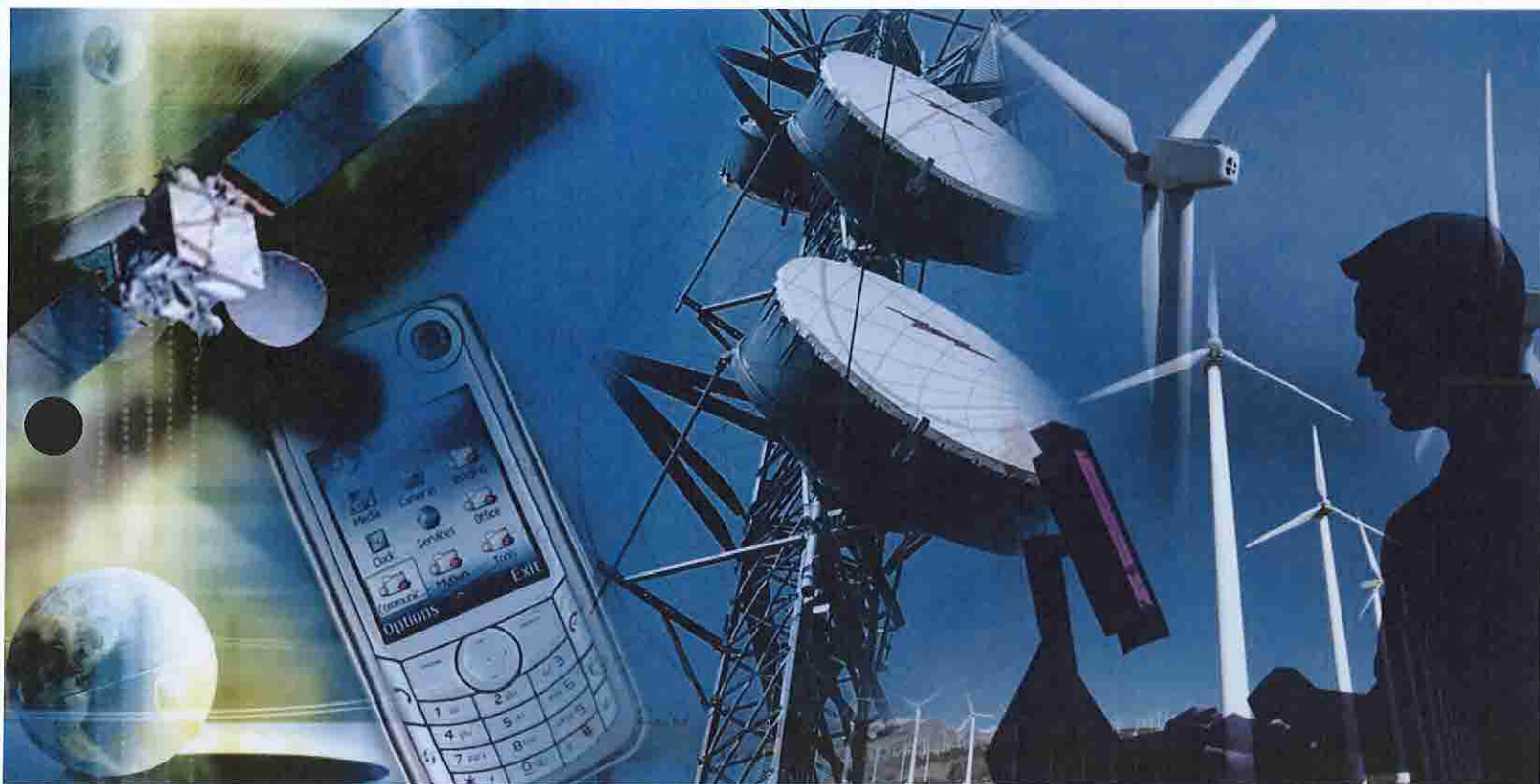
Mobile Phone Report

NTIA Correspondence

Wind Power GeoPlanner™

Off-Air TV Analysis

Buckeye Phase II



Prepared on Behalf of
Everpower

November 18, 2011



Table of Contents

1.	Introduction	- 1 -
2.	Summary of Results	- 1 -
3.	Impact Assessment	- 5 -
4.	Recommendations	- 6 -
5.	Contact Us	- 6 -
6.	Appendix A	- 7 -

1. Introduction

In this report, Comsearch analyzed the off-air television stations whose service could potentially be affected by the proposed Buckeye Phase II wind energy project in Champaign County, Ohio. Off-air stations are television broadcasters that transmit signals that can be received directly on a television receiver from terrestrially located broadcast facilities. Comsearch examined the coverage of the off-air TV stations and the communities in the area that could potentially have degraded television reception because of the location of the proposed wind energy project.

2. Summary of Results

The proposed wind energy project area and local communities are depicted in Figure 1, below.

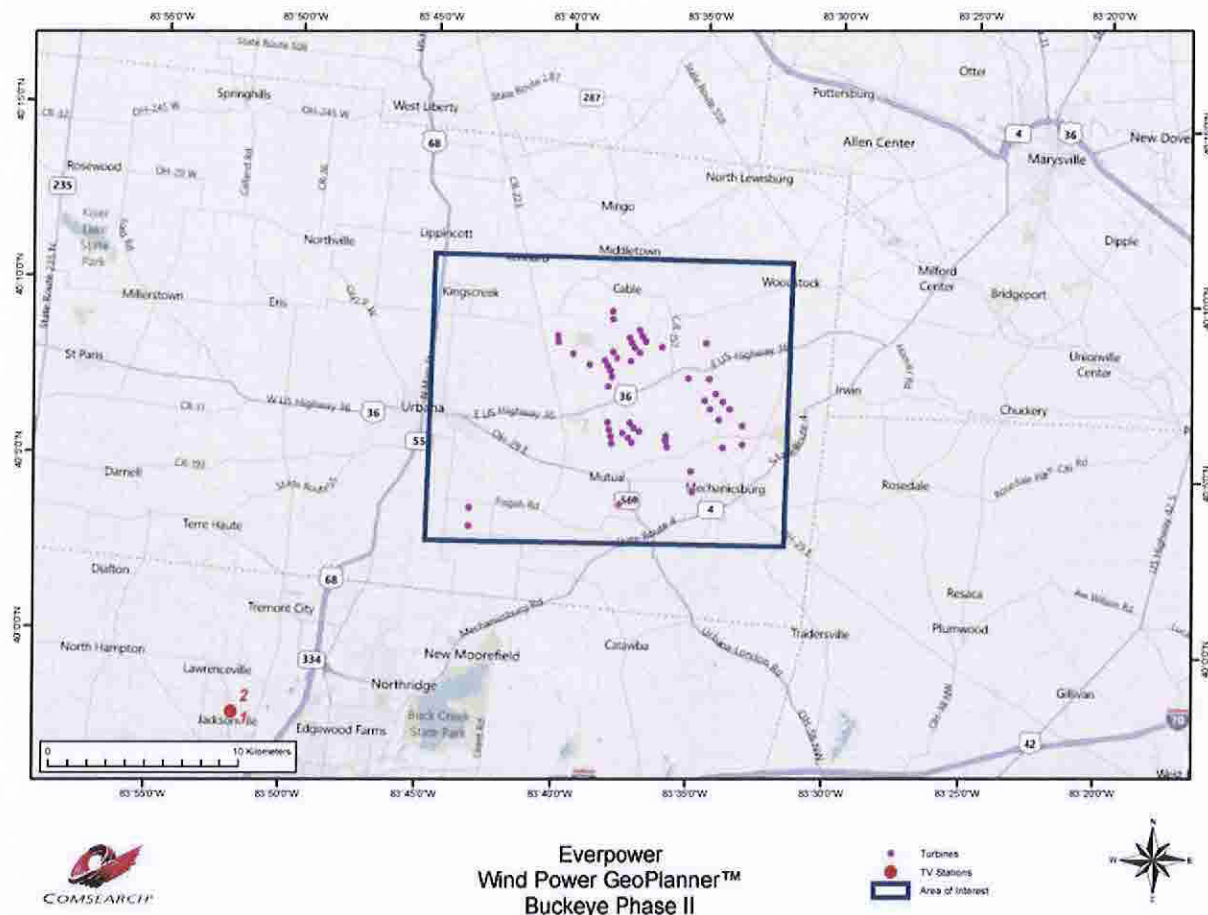


Figure 1: Wind Farm Project Area and Local Communities

To begin the analysis, Comsearch compiled all off-air television stations¹ within 150 kilometers of the wind project area of interest (AOI). Appendix A contains a tabular summary of these stations. A plot depicting their locations appears in Figure 2, below.

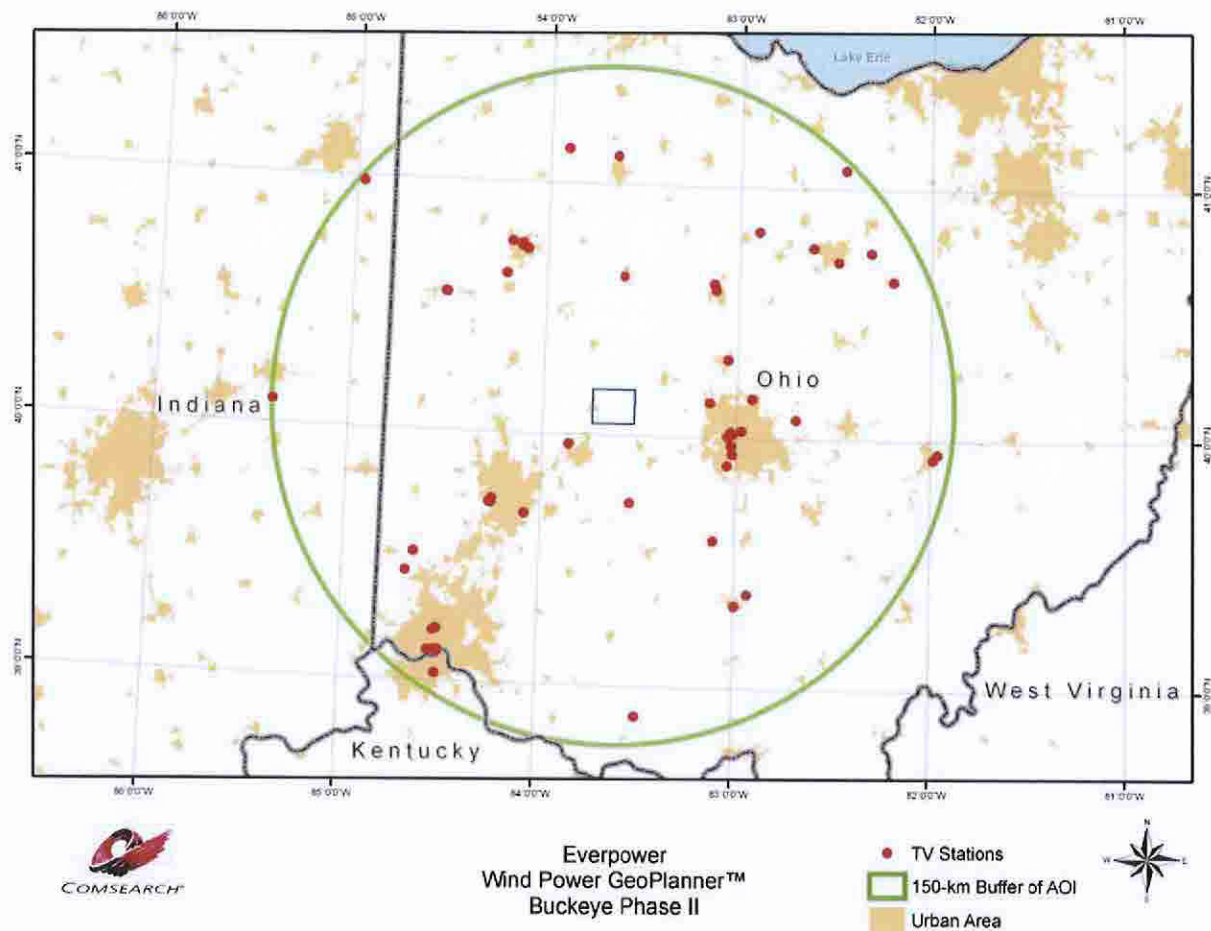


Figure 2: Plot of Off-Air TV Stations within 150 Kilometers of Project Area

TV stations at a distance of 65 kilometers or less are the most likely to provide off-air coverage to the project area and neighboring communities. These stations are listed in Table 1, below, and a plot depicting these locations is provided in Figure 3. There are a total of forty-nine database records for stations within approximately 65 kilometers of the wind energy project. Of these stations, twenty-four are currently licensed and operating, thirteen of which are low-power

¹ Comsearch makes no warranty as to the accuracy of the data included in this report beyond the date of the report. The data presented in this report is derived from the TV station's FCC license and governed by Comsearch's data license notification and agreement located at http://www.comsearch.com/files/data_license.pdf.

digital stations or translators. Translator stations are low-power stations that receive signals from distant broadcasters and retransmit the signal to a local audience. These stations serve local audiences and have limited range, which is a function of their transmit power and the height of their transmit antenna. The remaining eleven stations operate at full power and are licensed under call signs WCMH-TV, WBNS-TV, WTTE, WSYX, WOSU-TV, WHIO-TV, WPTD, WBDT, WRGT-TV, WKEF, and WDTN.

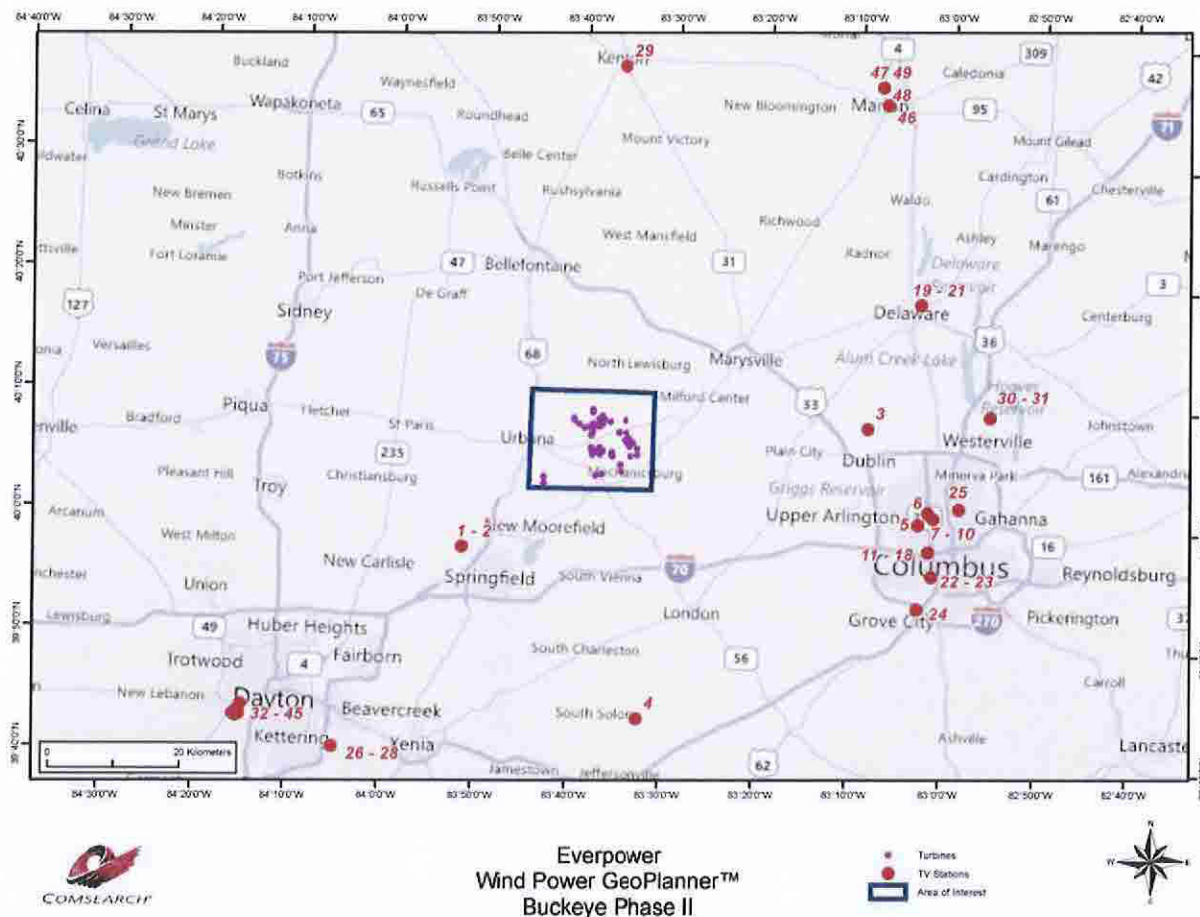


Figure 3: Plot of Off-Air TV Stations within 65 Kilometers of Project Area

ID	Call Sign	Status	Service ²	Channel	City	State	Distance to Nearest Turbine (km)
1	WLWD-LD	CP	LD	24	SPRINGFIELD	OH	15.80
2	WLWD-LP	LIC	TX	20	SPRINGFIELD	OH	15.80
3	DK02CG	STA	TX	3	DUBLIN	OH	35.54
4	960722KP	APP	TV	32	XENIA	OH	37.99
5	WGCT-CD	CP	CA	8	COLUMBUS	OH	44.44
6	W47DI-D	CP	LD	47	COLUMBUS	OH	45.49
7	WCPX-LP	CP	LD	25	COLUMBUS	OH	46.52
8	WCPX-LP	CP	LD	48	COLUMBUS	OH	46.52
9	WCSN-LD	LIC	LD	33	COLUMBUS	OH	46.52
10	WCPX-LP	LIC	TX	48	COLUMBUS	OH	46.52
11	WDEM-CD	CP	DC	17	COLUMBUS	OH	47.11
12	WDEM-CD	LIC	DC	17	COLUMBUS	OH	47.11
13	WCLL-CD	LIC	DC	19	COLUMBUS	OH	47.11
14	WBNS-TV	APP	DT	21	COLUMBUS	OH	47.11
15	WCMH-TV	LIC	DT	14	COLUMBUS	OH	47.11
16	WBNS-TV	LIC	DT	21	COLUMBUS	OH	47.11
17	W43BZ	CP	LD	44	COLUMBUS	OH	47.11
18	W43BZ	LIC	TX	43	COLUMBUS	OH	47.11
19	WOCB-CD	CP	DC	39	MARION	IN	48.69
20	WXCB-CD	CP	DC	42	DELAWARE	OH	48.69
21	WXCB-CD	LIC	DC	45	DELAWARE	OH	48.69
22	WTTE	LIC	DT	36	COLUMBUS	OH	48.90
23	WSYX	LIC	DT	48	COLUMBUS	OH	48.90
24	W23BZ-D	LIC	LD	23	COLUMBUS	OH	49.08
25	WGCT-CD	LIC	DC	8	COLUMBUS	OH	50.03
26	WWRD-LP	CP	LD	42	DAYTON	OH	51.72
27	WWRD-LP	APP	TX	32	CENTERVILLE	OH	51.72
28	WWRD-LP	LIC	TX	32	DAYTON	OH	51.72
29	WOCB-CD	APP	DC	48	MARION	OH	52.91
30	WOSU-TV	LIC	DT	38	COLUMBUS	OH	54.23
31	WCPX-LP	APP	LD	48	COLUMBUS	OH	54.23
32	WHIO-TV	APP	DT	41	DAYTON	OH	57.35
33	WHIO-TV	CP	DT	41	DAYTON	OH	57.35

² Definitions of service and status codes:

TV – Analog television broadcast station

DT – Digital television broadcast station

LD – Low power digital television broadcast station

CA – Class A analog television broadcast station

DC – Class A digital television broadcast station

TX – Translator station

LIC – Licensed and operational station

CP – Construction permit granted

APP – Application for construction permit, not yet operational

STA – Special transmit authorization, usually granted by FCC for temporary operation

ID	Call Sign	Status	Service ²	Channel	City	State	Distance to Nearest Turbine (km)
34	WHIO-TV	LIC	DT	41	DAYTON	OH	57.35
35	WPTD	LIC	DT	16	DAYTON	OH	58.37
36	WRGT-TV	APP	DT	30	DAYTON	OH	58.47
37	WBDT	LIC	DT	26	SPRINGFIELD	OH	58.47
38	WRGT-TV	LIC	DT	30	DAYTON	OH	58.47
39	WKEF	LIC	DT	51	DAYTON	OH	58.47
40	WLWD-LP	APP	LD	17	DAYTON	OH	58.47
41	WRCX-LP	CP	LD	40	DAYTON	OH	58.47
42	WRCX-LP	LIC	TX	40	DAYTON	OH	58.47
43	WDTN	LIC	DT	50	DAYTON	OH	58.95
44	W22DE	APP	TX	66	DAYTON	OH	59.11
45	W22DE	LIC	TX	22	DAYTON	OH	59.11
46	WMNO-CA	CP	DC	28	MARION	OH	62.89
47	WXCB-CD	APP	DC	45	DELAWARE	OH	64.53
48	WXCB-CD	APP	DC	45	DELAWARE	OH	64.53
49	WOCB-CD	LIC	DC	39	MARION	OH	64.53

Table 1: Off-Air TV Stations within 65 Kilometers of Project Area

3. Impact Assessment

The thirteen low power stations and translators within 65 kilometers of the project area are located at various distances from the turbines, with the closest station at a distance of 15.8 kilometers (WLWD). At this distance, the nearest turbines are more than 2 kilometers beyond the station's licensed coverage area and the current TV reception should not be affected.

The eleven full-power digital stations may have their reception disrupted in and around the Buckeye Phase II project, primarily in locations on the opposite side of the project area, relative to the station antennas. Communities and homes directly to the north and west of the project may have degraded reception of the Columbus-based stations to the southeast (WCMH-TV, WBNS-TV, WTTE, WSYX, and WOSU-TV) after the wind turbines are installed. Similarly, communities to the north and east of the project area may experience reception issues with the stations broadcasting from in and around Dayton (WHIO-TV, WPTD, WBDT, WRGT-TV, WKEF, and WDTN). However, based on the low number of full-power TV channels available in the immediate vicinity of the project area and the fact that the closest full power station is 47.1 kilometers from the turbines, it is unlikely that off-air television stations are the primary mode of television service for the local communities. TV cable service, where available, and/or direct broadcast satellite service (DBS), are most likely the dominant modes of service delivery.

4. Recommendations

Both cable service and direct broadcast satellite service will be unaffected by the presence of the wind turbine facility and may be offered to those residents who can show that their off-air TV reception has been disrupted by the presence of the wind turbines after they are installed. In some cases improving the television reception system would restore potentially lost reception. The improvements may involve installing higher gain receiving antennas with a pre-amplifier, or installing the antennas on tall masts with steerable antenna mounts so the antenna can be pointed directly at the desired stations. Other improvements include low-loss transmission lines and amplified splitters. These improvements may be offered as a solution but they may not restore all of the lost station coverage.

5. Contact Us

For questions or information regarding the Off-Air TV Analysis, please contact:

Contact person:	Lester Polisky
Title:	Senior Principal Engineer
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5860
Fax:	703-726-5595
Email:	llpolisky@comsearch.com
Web site:	www.comsearch.com

6. Appendix A

ID	Call Sign	Status	Service ³	Channel	City	State	Distance to Nearest Turbine (km)
1	WLWD-LD	CP	LD	24	SPRINGFIELD	OH	15.80
2	WLWD-LP	LIC	TX	20	SPRINGFIELD	OH	15.80
3	DK02CG	STA	TX	3	DUBLIN	OH	35.54
4	960722KP	APP	TV	32	XENIA	OH	37.99
5	WGCT-CD	CP	CA	8	COLUMBUS	OH	44.44
6	W47DI-D	CP	LD	47	COLUMBUS	OH	45.49
7	WCPX-LP	CP	LD	25	COLUMBUS	OH	46.52
8	WCPX-LP	CP	LD	48	COLUMBUS	OH	46.52
9	WCSN-LD	LIC	LD	33	COLUMBUS	OH	46.52
10	WCPX-LP	LIC	TX	48	COLUMBUS	OH	46.52
11	WDEM-CD	CP	DC	17	COLUMBUS	OH	47.11
12	WDEM-CD	LIC	DC	17	COLUMBUS	OH	47.11
13	WCLL-CD	LIC	DC	19	COLUMBUS	OH	47.11
14	WBNS-TV	APP	DT	21	COLUMBUS	OH	47.11
15	WCMH-TV	LIC	DT	14	COLUMBUS	OH	47.11
16	WBNS-TV	LIC	DT	21	COLUMBUS	OH	47.11
17	W43BZ	CP	LD	44	COLUMBUS	OH	47.11
18	W43BZ	LIC	TX	43	COLUMBUS	OH	47.11
19	WOCB-CD	CP	DC	39	MARION	IN	48.69
20	WXXB-CD	CP	DC	42	DELAWARE	OH	48.69
21	WXXB-CD	LIC	DC	45	DELAWARE	OH	48.69
22	WTTE	LIC	DT	36	COLUMBUS	OH	48.90
23	WSYX	LIC	DT	48	COLUMBUS	OH	48.90
24	W23BZ-D	LIC	LD	23	COLUMBUS	OH	49.08
25	WGCT-CD	LIC	DC	8	COLUMBUS	OH	50.03
26	WWRD-LP	CP	LD	42	DAYTON	OH	51.72
27	WWRD-LP	APP	TX	32	CENTERVILLE	OH	51.72
28	WWRD-LP	LIC	TX	32	DAYTON	OH	51.72

³ Definitions of service and status codes :

TV – Analog television broadcast station

DT – Digital television broadcast station

DS – Digital special temporary authority (STA)

LP – Low power analog television broadcast station

LD – Low power digital television broadcast station

CA – Class A analog television broadcast station

DC – Class A digital television broadcast station

TX – Translator station

LIC – Licensed and operational station

CP – Construction permit granted

CP MOD – Modification of construction permit

APP – Application for construction permit, not yet operational

STA – Special transmit authorization, usually granted by FCC for temporary operation

ID	Call Sign	Status	Service ³	Channel	City	State	Distance to Nearest Turbine (km)
29	WOCB-CD	APP	DC	48	MARION	OH	52.91
30	WOSU-TV	LIC	DT	38	COLUMBUS	OH	54.23
31	WCPX-LP	APP	LD	48	COLUMBUS	OH	54.23
32	WHIO-TV	APP	DT	41	DAYTON	OH	57.35
33	WHIO-TV	CP	DT	41	DAYTON	OH	57.35
34	WHIO-TV	LIC	DT	41	DAYTON	OH	57.35
35	WPTD	LIC	DT	16	DAYTON	OH	58.37
36	WRGT-TV	APP	DT	30	DAYTON	OH	58.47
37	WBDT	LIC	DT	26	SPRINGFIELD	OH	58.47
38	WRGT-TV	LIC	DT	30	DAYTON	OH	58.47
39	WKEF	LIC	DT	51	DAYTON	OH	58.47
40	WLWD-LP	APP	LD	17	DAYTON	OH	58.47
41	WRCX-LP	CP	LD	40	DAYTON	OH	58.47
42	WRCX-LP	LIC	TX	40	DAYTON	OH	58.47
43	WDTN	LIC	DT	50	DAYTON	OH	58.95
44	W22DE	APP	TX	66	DAYTON	OH	59.11
45	W22DE	LIC	TX	22	DAYTON	OH	59.11
46	WMNO-CA	CP	DC	28	MARION	OH	62.89
47	WXCBCD	APP	DC	45	DELAWARE	OH	64.53
48	WXCBCD	APP	DC	45	DELAWARE	OH	64.53
49	WOCB-CD	LIC	DC	39	MARION	OH	64.53
50	WWHO	LIC	DT	46	CHILLICOTHE	OH	67.32
51	WOHL-CD	CP	DC	25	LIMA	OH	70.88
52	W23DE-D	APP	LD	23	LIMA	OH	70.88
53	W23DE-D	CP	LD	43	LIMA	OH	70.88
54	W23DE-D	LIC	LD	23	LIMA	OH	70.88
55	WLQP-LP	LIC	TX	18	LIMA	OH	70.88
56	WLMO-LP	LIC	TX	38	LIMA	OH	70.88
57	WSFJ-TV	LIC	DT	24	NEWARK	OH	73.38
58	WLQP-LP	APP	LD	18	LIMA	OH	74.87
59	NEW	APP	LD	20	FINDLAY	OH	74.87
60	WLMO-LP	APP	LD	38	LIMA	OH	74.87
61	WLIO	LIC	DT	8	LIMA	OH	77.44
62	WOHL-CD	APP	LD	35	LIMA	OH	77.44
63	WLQP-LP	CP	LD	45	LIMA	OH	77.44
64	WLMO-LP	CP	LD	47	LIMA	OH	77.44
65	WOHL-CD	LIC	DC	35	LIMA	OH	77.45
66	NEW	APP	LD	16	LIMA	OH	78.23
67	NEW	APP	LD	29	LIMA	OH	78.23
68	NEW	APP	LD	42	LIMA	OH	78.23
69	NEW	APP	LD	49	LIMA	OH	78.23
70	WTLW	LIC	DT	44	LIMA	OH	81.18

ID	Call Sign	Status	Service ³	Channel	City	State	Distance to Nearest Turbine (km)
71	W17AA	LIC	TX	17	CELINA	OH	84.59
72	W17AA	APP	TX	17	CELINA	OH	84.95
73	W17AA	CP MOD	LD	17	CELINA	OH	84.96
74	W32DS-D	LIC	LD	32	MAPLEWOOD	OH	84.96
75	WMNO-CA	LIC	CA	22	BUCYRUS	OH	95.03
76	W59DL	APP	LD	31	CHILLICOTHE	OH	95.35
77	W59DL	LIC	TX	59	CHILLICOTHE	OH	96.62
78	WKOI-TV	APP	DS	39	RICHMOND	IN	98.76
79	WKOI-TV	CP	DT	39	RICHMOND	IN	98.76
80	WKOI-TV	LIC	DT	39	RICHMOND	IN	98.76
81	W09CG	APP	LD	51	FINDLAY	OH	105.88
82	WFND-LP	CP	LD	22	FINDLAY	OH	105.88
83	W09CG	LIC	TX	9	FINDLAY	OH	105.88
84	WFND-LP	LIC	TX	22	FINDLAY	OH	105.88
85	DW27CT	APP	LD	6	COLUMBIA	IN	106.62
86	WOHZ-CA	LIC	CA	41	MANSFIELD	OH	106.70
87	WOHZ-CA	APP	DC	41	MANSFIELD	OH	106.70
88	WMFD-TV	LIC	DT	12	MANSFIELD	OH	106.70
89	W32AR	APP	LD	18	LEXINGTON	OH	106.70
90	W32AR	LIC	TX	32	LEXINGTON	OH	106.70
91	WBGU-TV	LIC	DT	27	BOWLING GREEN	OH	111.08
92	W43CZ-D	APP	LD	47	MANSFIELD	OH	111.96
93	W43CZ-D	LIC	LD	43	MANSFIELD	OH	111.96
94	WDYC-LP	CP	LD	36	CINCINNATI	OH	115.62
95	WDYC-LP	LIC	TX	36	CINCINNATI	OH	115.62
96	WSTR-TV	LIC	DT	33	CINCINNATI	OH	117.14
97	WOTH-CA	LIC	CA	38	CINCINNATI	OH	122.90
98	WCPO-TV	LIC	DT	22	CINCINNATI	OH	122.90
99	WOTH-LD	LIC	LD	20	CINCINNATI	OH	122.90
100	WBQC-LD	LIC	LD	47	CINCINNATI	OH	122.90
101	WBQC-LP	APP	TX	25	CINCINNATI	OH	122.90
102	WBQC-LP	CP	TX	19	CINCINNATI	OH	122.90
103	WBQC-LP	LIC	TX	25	CINCINNATI	OH	122.90
104	WKRC-TV	LIC	DT	12	CINCINNATI	OH	123.85
105	WDYC-LP	CP MOD	LD	36	CINCINNATI	OH	123.85
106	WCET	LIC	DT	34	CINCINNATI	OH	124.05
107	WLWT	LIC	DT	35	CINCINNATI	OH	124.05
108	WDYC-LP	CP	LD	36	CINCINNATI	OH	124.05
109	WPTO	LIC	DT	28	OXFORD	OH	125.52
110	WXIX-TV	LIC	DT	29	NEWPORT	KY	125.52
111	W33BW	LIC	TX	33	ASHLAND	OH	126.43
112	WIVX-LD	LIC	LD	51	LOUDONVILLE	OH	129.35

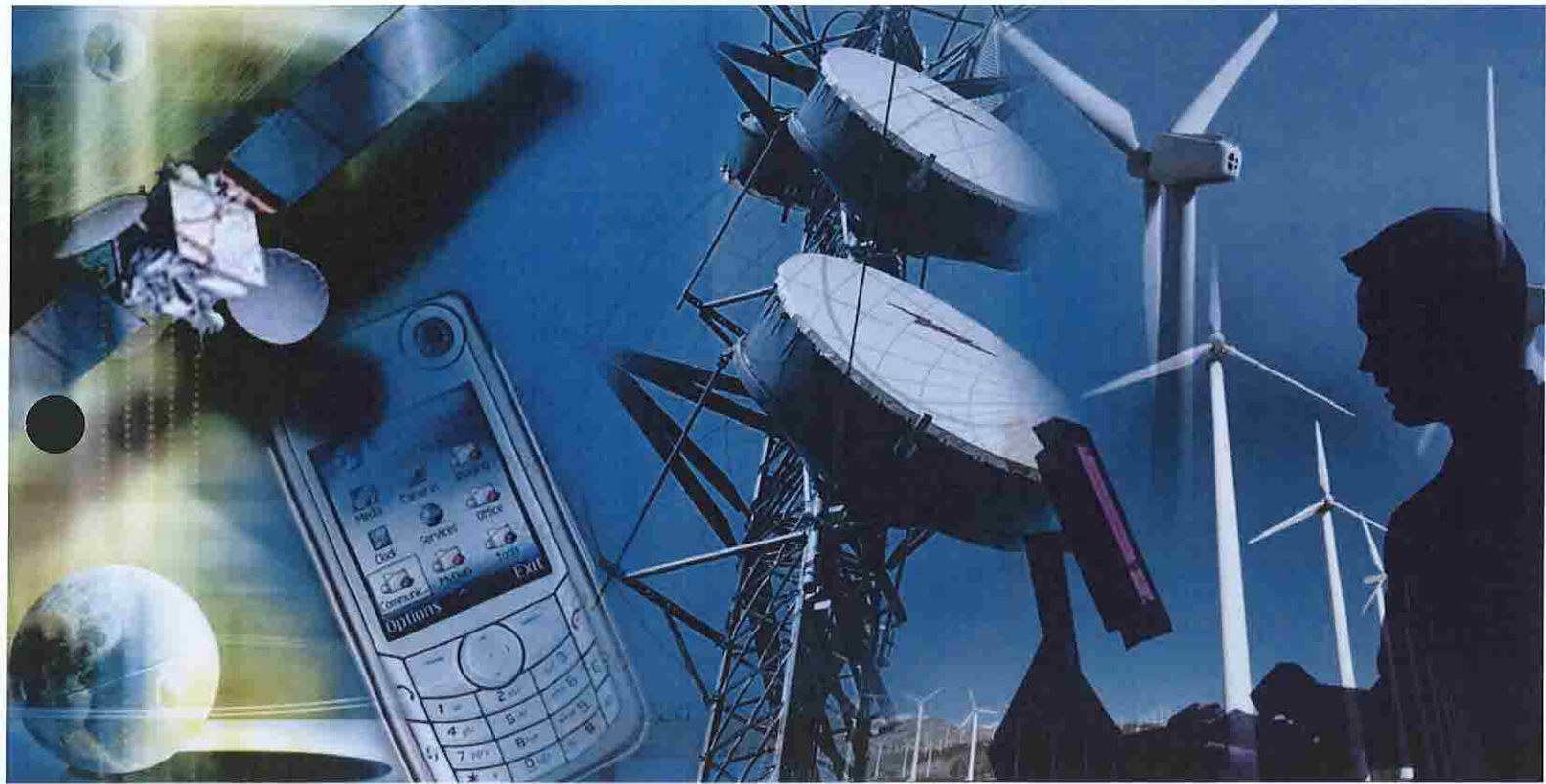
ID	Call Sign	Status	Service ³	Channel	City	State	Distance to Nearest Turbine (km)
113	W17AY	LIC	TX	17	SEAMAN	OH	131.79
114	WCVN-TV	LIC	DT	24	COVINGTON	KY	132.18
115	WHIZ-TV	LIC	DT	40	ZANESVILLE	OH	135.31
116	W16BT	CP	LD	16	ZANESVILLE	OH	136.86
117	W16BT	LIC	TX	16	ZANESVILLE	OH	136.86
118	WGGN-TV	LIC	DT	42	SANDUSKY	OH	140.69
119	WIPB	LIC	DT	23	MUNCIE	IN	142.58
120	NEW	APP	LD	4	FORT WAYNE	IN	143.44
121	NEW	APP	LD	4	FORT WAYNE	IN	143.44
122	NEW	APP	LD	26	FORT WAYNE	IN	143.44
123	W16CU-D	CP MOD	LD	16	FORT WAYNE	IN	143.44
124	W29DX-D	CP MOD	LD	29	FORT WAYNE	IN	143.44
125	W41DS-D	CP MOD	LD	41	FORT WAYNE	IN	143.44
126	W43DI-D	CP MOD	LD	43	FORT WAYNE	IN	143.44
127	W49DP-D	CP MOD	LD	49	FORT WAYNE	IN	143.44

Table A: Off-Air TV Stations within 150 Kilometers of Project Area

Wind Power GeoPlanner™

AM and FM Radio Report

Buckeye Phase II



Prepared on Behalf of
Everpower

November 18, 2011



Table of Contents

1.	Introduction	- 1 -
2.	Summary of Results	- 1 -
3.	Impact Assessment	- 4 -
4.	Recommendations	- 6 -
5.	Contact Us	- 7 -

1. Introduction

In this report, Comsearch analyzed AM and FM radio broadcast stations whose service could potentially be affected by the proposed Buckeye Phase II wind energy project in Champaign County, Ohio.

2. Summary of Results

AM Radio Analysis

Comsearch found one database record¹ for AM stations within approximately 30 kilometers of the project, as shown in Table 1 and Figure 1. This record represents station WIZE, which is located in Springfield, Ohio and has a non-directional antenna.

ID	Call Sign	Status	Frequency (kHz)	Transmit ERP (kW)	City	State	Distance to Nearest Turbine (km)
1	WIZE	LIC	1340	1.0	SPRINGFIELD	OH	13.58

Table 1: AM Radio Stations

LIC = Licensed and Operational
kHz = kiloHertz
ERP = Transmit Effective Radiated Power
kW = kilowatts
km = kilometers

¹ Comsearch makes no warranty as to the accuracy of the data included in this report beyond the date of the report. The data presented in this report is derived from the AM/FM station's FCC license and governed by Comsearch's data license notification and agreement located at http://www.comsearch.com/files/data_license.pdf.

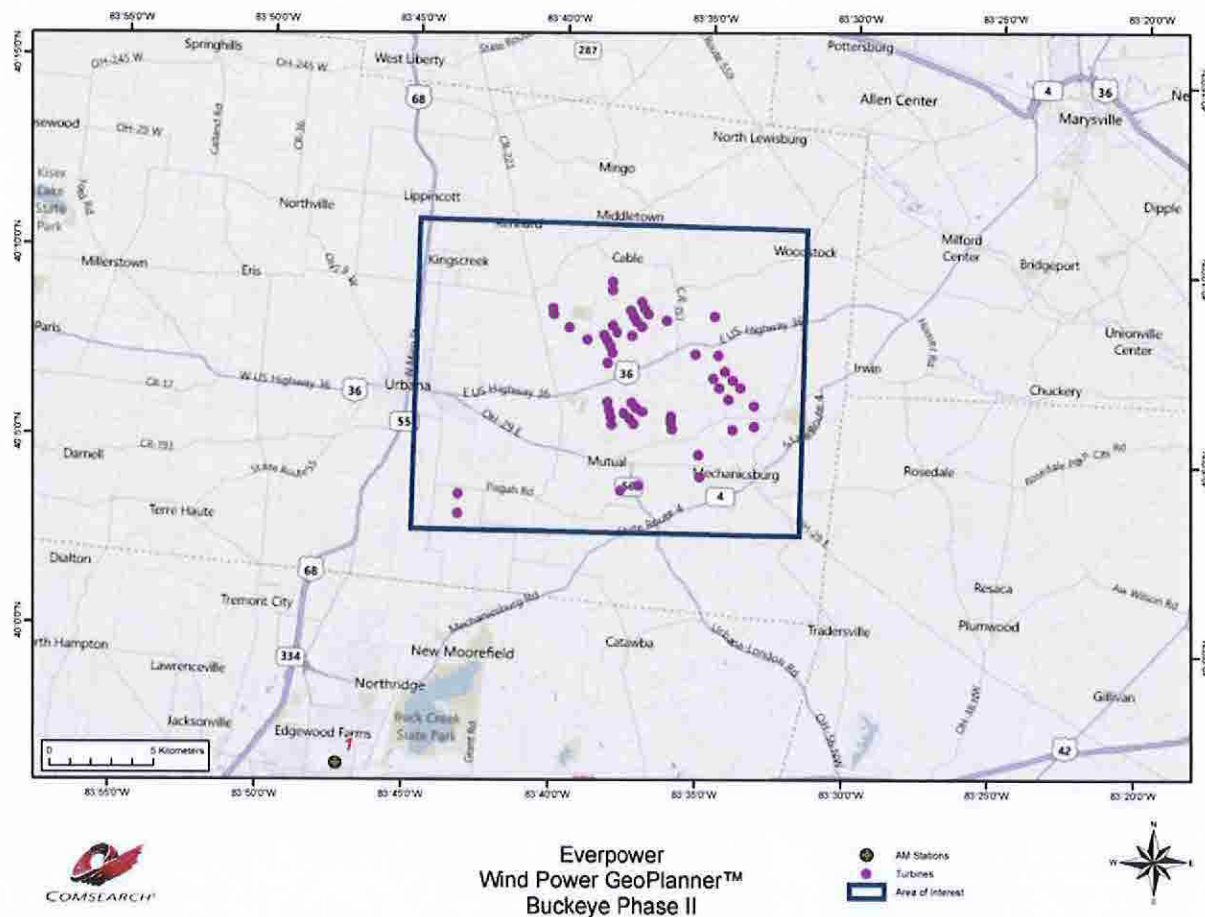


Figure 1: Plot of AM Radio Stations

FM Radio Analysis

Comsearch determined that there were two database records for FM stations within a 30 kilometer radius of the Buckeye Phase II project, as shown in Table 2 and Figure 2. The first of these, W279BB, is a translator station that operates at low power and has limited range. The second record is a full-power station, which is located in South Vienna, OH and operates under call sign WOAR.

ID	Call Sign	Status	Frequency (MHz)	Transmit ERP (kW)	City	State	Distance to Nearest Turbine (km)
1	W279BB	LIC	103.7	0.013	URBANA	OH	3.97
2	WOAR	LIC	88.3	1.0	SOUTH VIENNA	OH	15.05

Table 2: FM Radio Stations

LIC – Licensed and operational station
MHz = megaHertz
ERP = Transmit Effective Radiated Power
kW = kiloWatts
km = kilometers

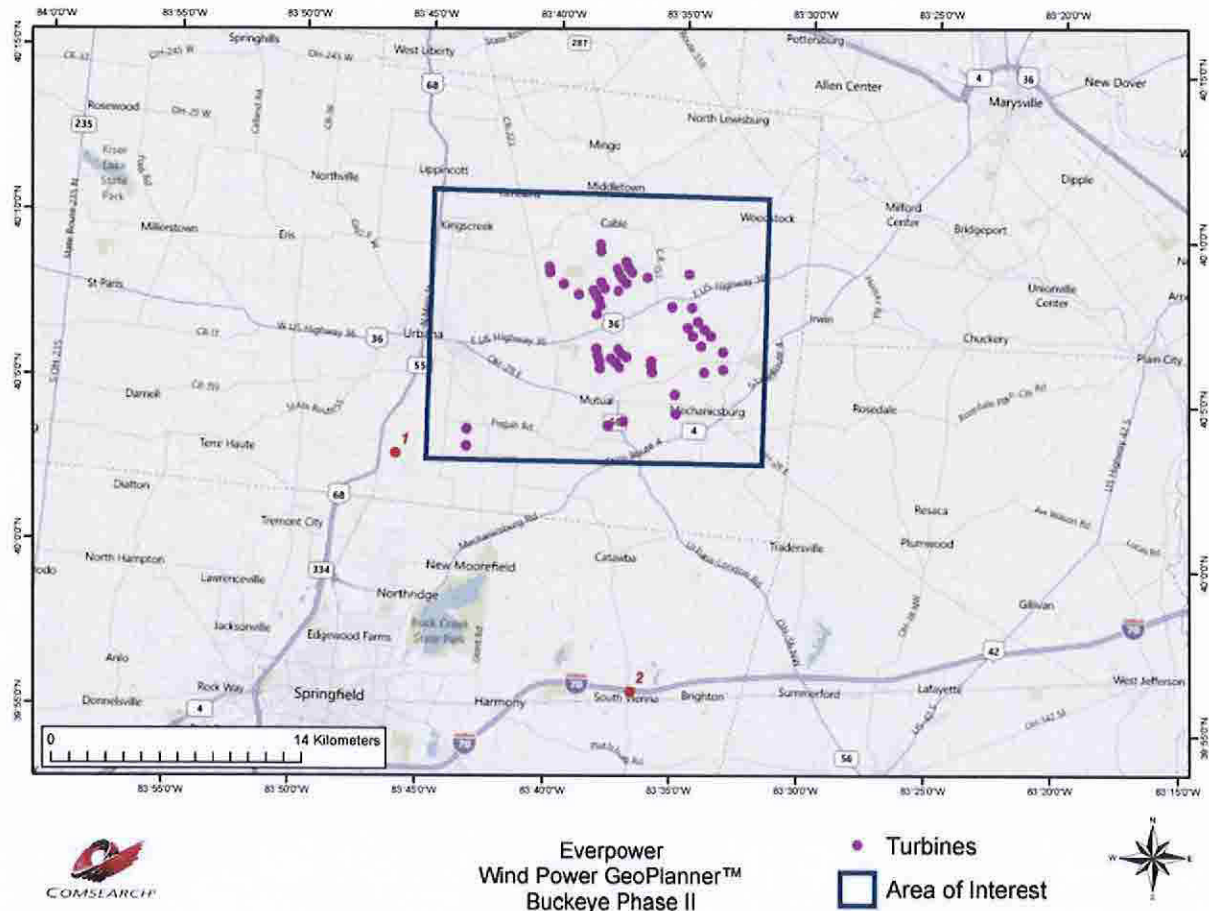


Figure 2: Plot of FM Radio Stations

3. Impact Assessment

Potential problems with AM broadcast coverage are only anticipated when AM broadcast stations with directive antennas are within 3.2 kilometers of wind turbine towers and AM broadcast stations with non-directive antennas are within 0.8 kilometers. The closest station to the Buckeye wind energy project, WIZE, is non-directive and located more than 13.5 kilometers from the nearest turbine. Therefore, no impact to the coverage of AM stations should result due to the presence of the proposed turbines.

The coverage of FM stations, when the stations are at distances greater than 4.0 kilometers from wind turbines, is not subject to degradation. The closest station to the Buckeye project, W279BB, is 3.97 kilometers from the nearest turbine location. Figure 3 shows the coverage contour diagram for the station and the wind turbines closest to the coverage. The closest wind turbine, Turbine ID 124, is inside the coverage contour and may cause a slight reduction in the range of the station in the azimuth it obstructs. This means that the listening audience could be

lost in the area directly on the other side of the turbine. Figure 4 depicts the area where the potential lost audience would exist, which is approximately 0.06 square kilometers of farmland. The other turbines are either on or beyond the coverage contour and will not affect the range of the station. The other FM station in the immediate vicinity, WOAR, is more than 15 kilometers from the nearest turbine and falls well outside the area potentially impacted by the turbines.

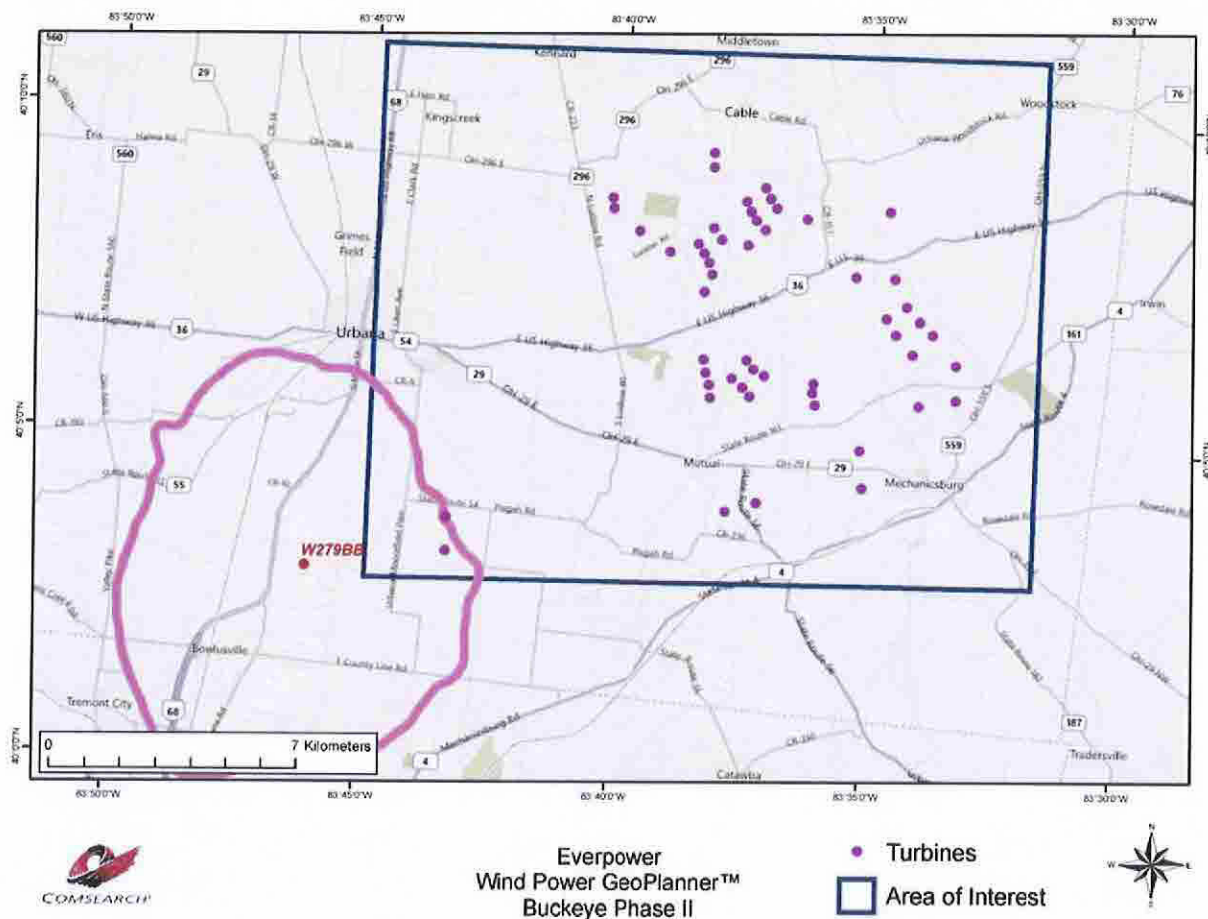


Figure 3: Plot of FM Radio W29BB Coverage Contour and Wind Turbines

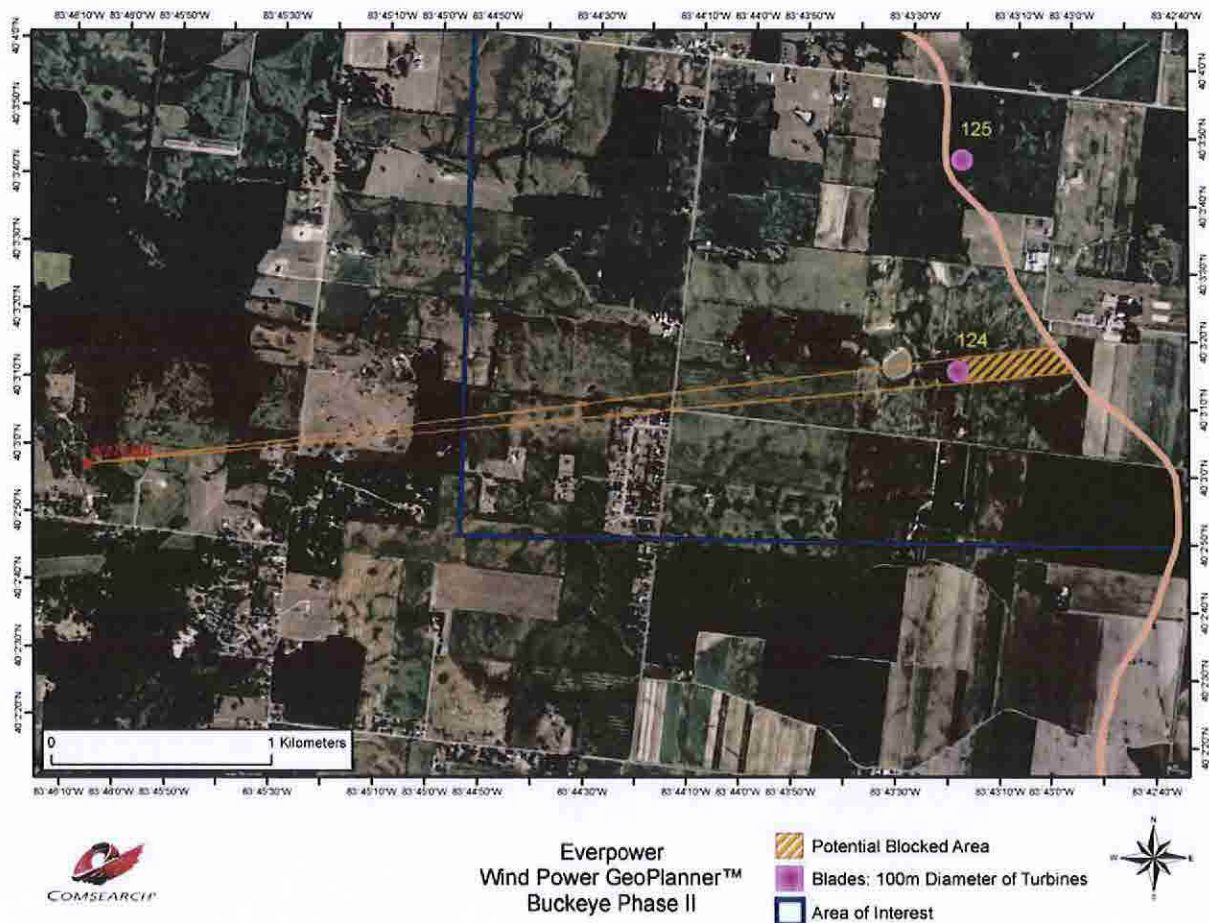


Figure 4: Potential Area of Lost Coverage for FM Radio W279BB Due to Presence of Turbines

4. Recommendations

Since no impact on the AM broadcast station was identified in our analysis, no recommendations or mitigation techniques are required for this project. The obstruction in coverage to FM translator station W279BB will consist of a small geographic area of farmland less than 0.06 square kilometers (see Figure 4). Due to the size and type of land, the FM station will likely not have any objection to the turbine presence. Most broadcast stations do not have property rights with regard to their coverage, as it pertains to any physical structure that may be erected. However, if necessary, the developer can mitigate the obstruction by moving the wind turbine so that it is outside the coverage contour of the station.

5. Contact Us

For questions or information regarding the AM and FM Radio Report, please contact:

Contact person:	Lester Polisky
Title:	Senior Principal Engineer
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5860
Fax:	703-726-5595
Email:	lpolisky@comsearch.com
Web site:	www.comsearch.com

Wind Power GeoPlanner™

Licensed Microwave Report

Buckeye II Wind Project



Prepared on Behalf of
Champaign Wind, LLC

March 22, 2012



Table of Contents

1.	Introduction	- 1 -
2.	Summary of Results	- 2 -
3.	Tables and Figures	- 4 -
4.	Contact Us	- 11 -

1. Introduction

The use of wind energy, one of the oldest forms of harnessing a natural energy source, is now one of the world's fastest growing alternative energy sources. The United States is committed to the use of wind energy, and over the next several years billions of dollars will be spent on wind power projects. However, as new wind turbine generators are installed around the country, it is important to note that they may interfere with existing microwave systems and broadcast stations licensed to operate in the United States.

Wind turbines can interfere with microwave paths by physically blocking the line-of-sight between two microwave transmitters. Additionally, wind turbines have the potential to cause blockage and reflections ("ghosting") to television reception. Blockage is caused by the physical presence of the turbines between the television station and the reception points. Ghosting is caused by multipath interference that occurs when a broadcast signal reflects off of a large reflective object—in this case a wind turbine—and arrives at a television receiver delayed in time from the signal that arrives via direct path.

Many states and other jurisdictions recognize the need for regulations addressing interference to radio signal transmissions from the wind turbine installations. Specifically, local planning authorities typically require project developers to ensure wind turbines will not cause interference. In some cases they require developers to notify the telecommunication operators in the area of the proposed wind turbine installation. Other factors prompting developers to undertake proactive investigation into potential interference include the need to prevent legal and regulatory problems and the desire to promote goodwill within the community—a good neighbor approach.

Comsearch has developed and maintains comprehensive technical databases containing information on licensed microwave networks throughout the United States. Microwave bands that may be affected by the installation of wind turbine facilities operate over a wide frequency range (900 MHz – 23 GHz). These systems are the telecommunication backbone of the country, providing long-distance and local telephone service, backhaul for cellular and personal communication service, data interconnects for mainframe computers and the Internet, network controls for utilities and railroads, and various video services.

This report focuses on the potential impact of wind turbines on licensed non-federal government microwave systems. Comsearch provides additional wind energy services, a description of which is available upon request.

2. Summary of Results

An overall summary of results appears below.

Project Information

Name: Buckeye II Wind Project

County: Champaign

State: Ohio

Total Microwave Paths	Paths with Obstructions	Total Turbines	Turbine Obstructions
14	0	56	0

Methodology

Our obstruction analysis was performed using Comsearch's proprietary microwave database, which contains all non-government licensed paths from 0.9 - 23 GHz¹. First, we determined all microwave paths that intersect the area of interest². The area of interest was defined by the client and encompasses the planned turbine locations. Next, for each microwave path that intersected the project area, we calculated a Worst Case Fresnel Zone (WCFZ). The mid-point of a full microwave path is the location where the widest (or worst case) Fresnel zone occurs. Fresnel zones were calculated for each path using the following formula.

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

Where,

- R_n = Fresnel Zone radius at a specific point in the microwave path, meters
- n = Fresnel Zone number, 1
- F_{GHz} = Frequency of microwave system, GHz
- d_1 = Distance from antenna 1 to a specific point in the microwave path, kilometers
- d_2 = Distance from antenna 2 to a specific point in the microwave path, kilometers

For worst case Fresnel zone calculations, $d_1 = d_2$

¹ Please note that this analysis does not include unlicensed microwave paths or federal government paths that are not registered with the FCC.

² We use FCC-licensed coordinates to determine which paths intersect the area of interest. It is possible that as-built coordinates may differ slightly from those on the FCC license.

The calculated WCFZ radius, giving the linear path an area or swath, buffers each microwave path in the project area. See the Tables and Figures section for a summary of paths and WCFZ distances. In general, this is the two-dimensional area where the planned wind turbines should be avoided, if possible. A depiction of the WCFZ overlaid on topographic basemaps can be found in the Tables and Figures section, and is also included on the enclosed spreadsheet and shapefiles^{3,4}.

Discussion of Potential Obstructions

For this project, 56 turbines were considered in the analysis, each with a blade diameter of 100 meters and turbine hub height of 100 meters.

None of the turbines were found to have a potential conflict with the incumbent microwave paths.

³ The ESRI® shapefiles enclosed are in NAD 83 UTM Zone 17 projected coordinate system.

⁴ Comsearch makes no warranty as to the accuracy of the data included in this report beyond the date of the report. The data provided in this report is governed by Comsearch's data license notification and agreement located at http://www.comsearch.com/files/data_license.pdf.

3. Tables and Figures

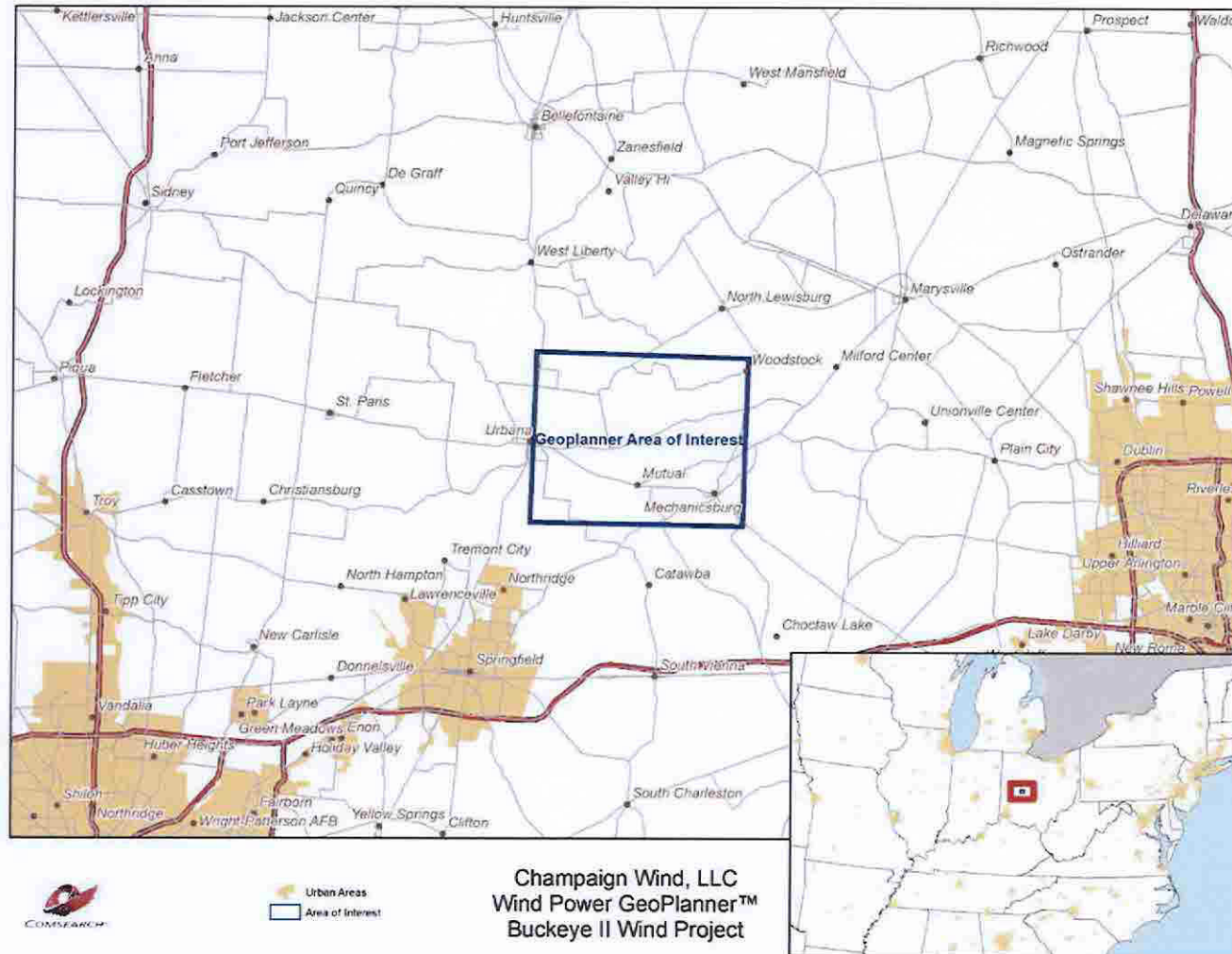
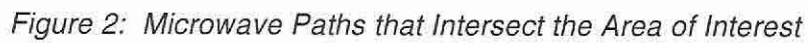
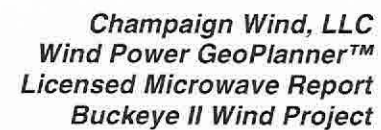


Figure 1: Area of Interest





This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

5/15/2012 4:36:08 PM

in

Case No(s). 12-0160-EL-BGN

Summary: Application of Champaign Wind LLC, Vol III, Part 42 electronically filed by Mr. Michael J. Settineri on behalf of Champaign Wind LLC