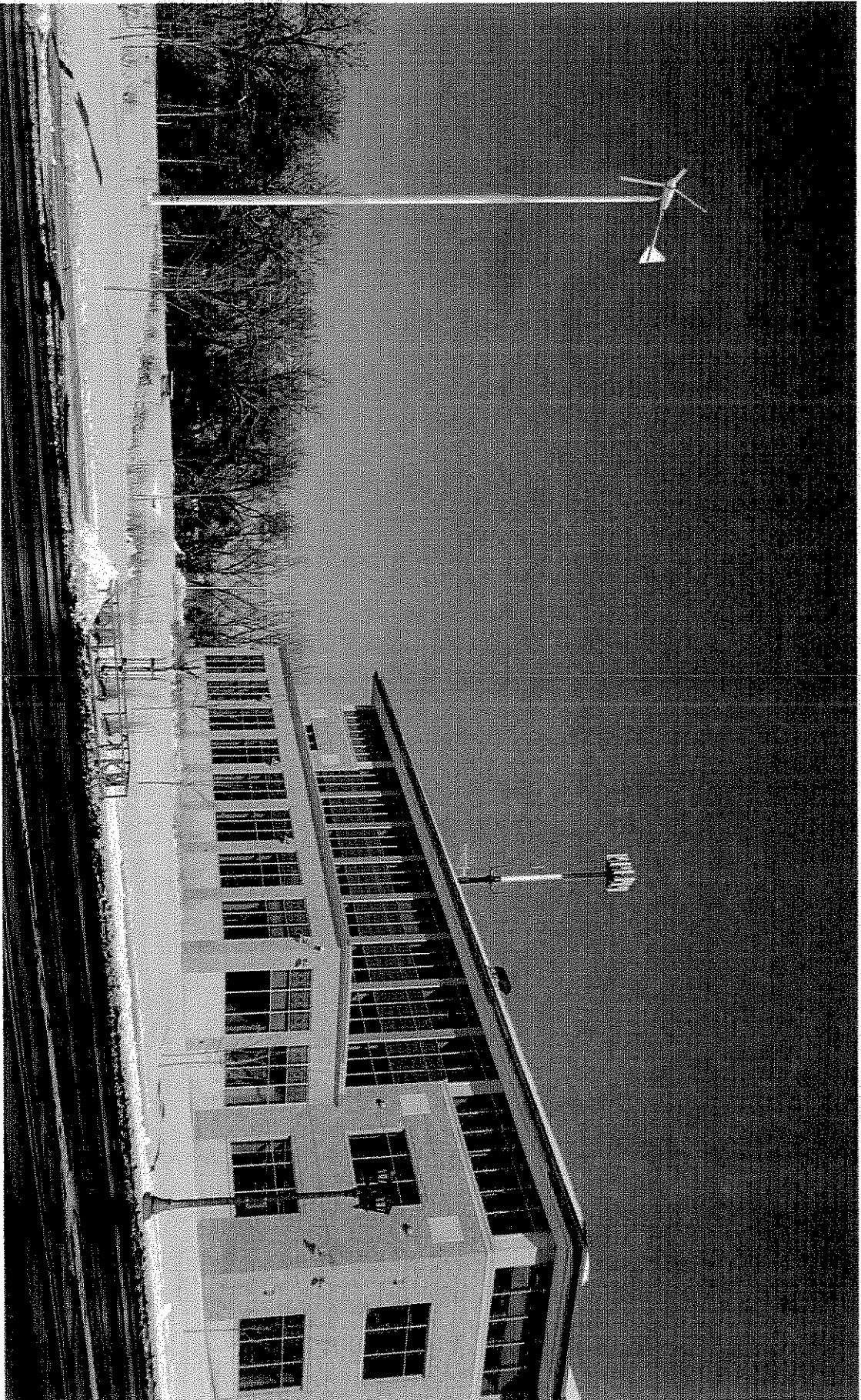
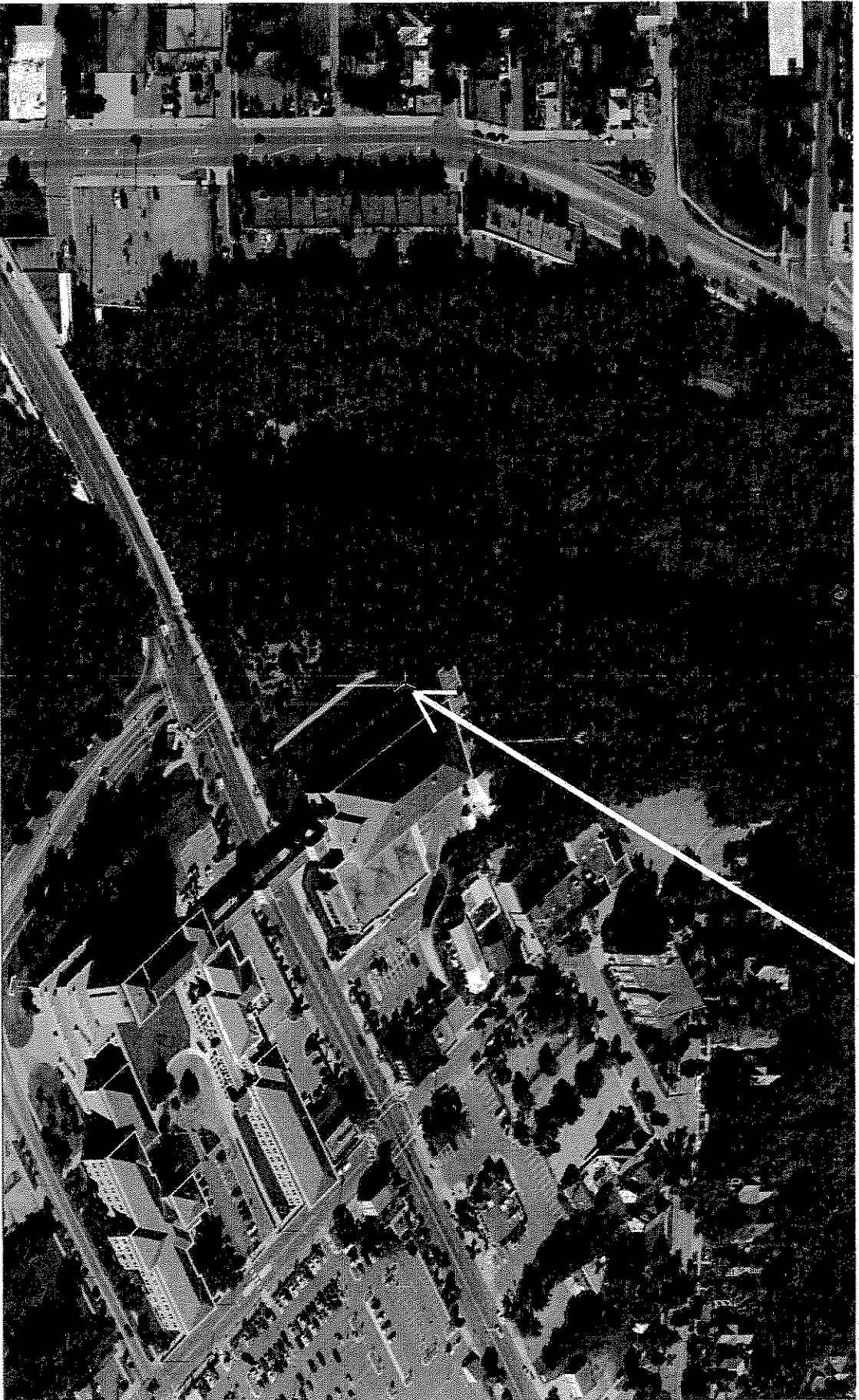


# Attachment 1



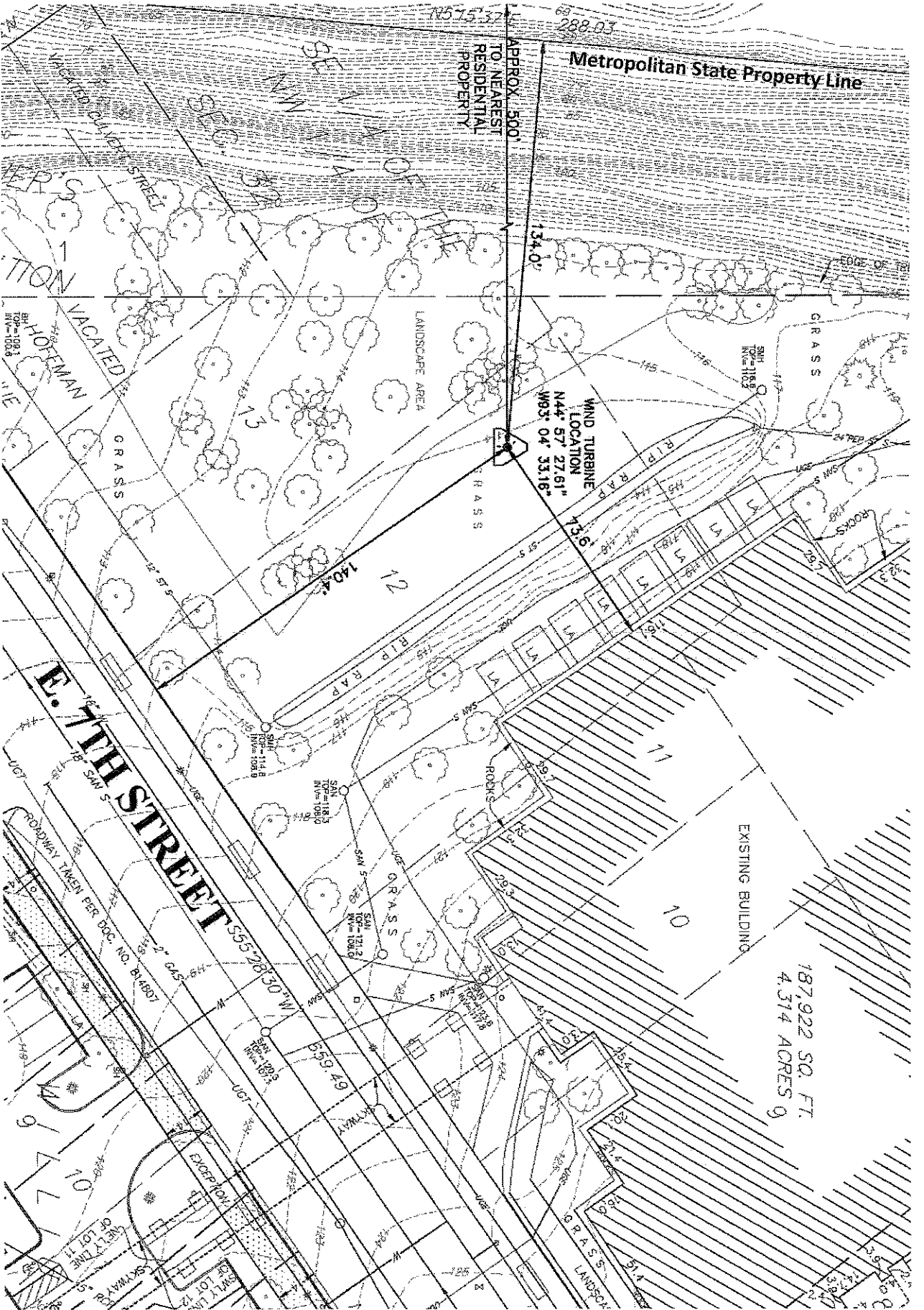
**Metro State University**

Winter View of Wind Turbine from 7th and Mounds Boulevard

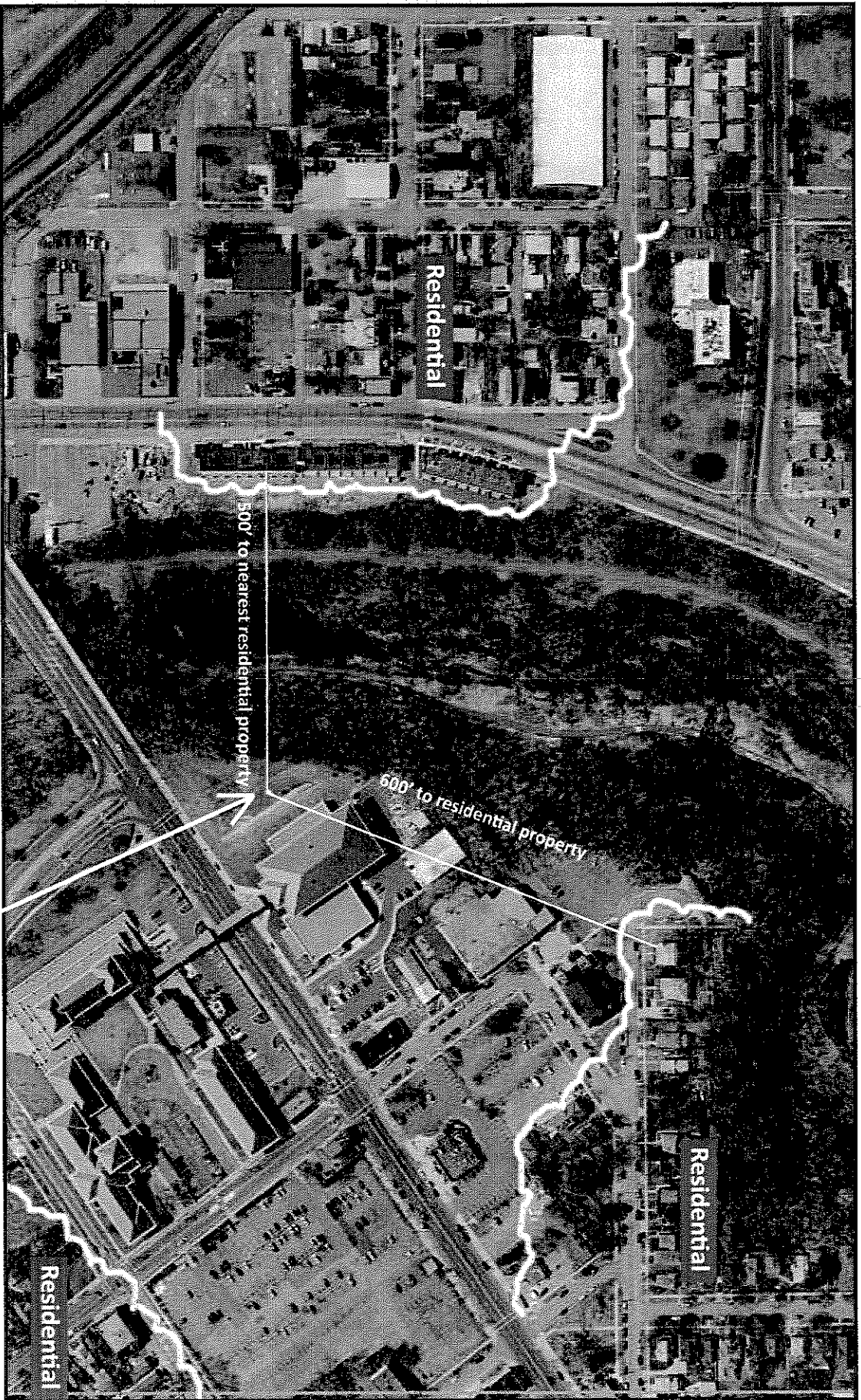


Location of Wind Turbine

**Metro State University**  
Aerial View of Wind Turbine Location



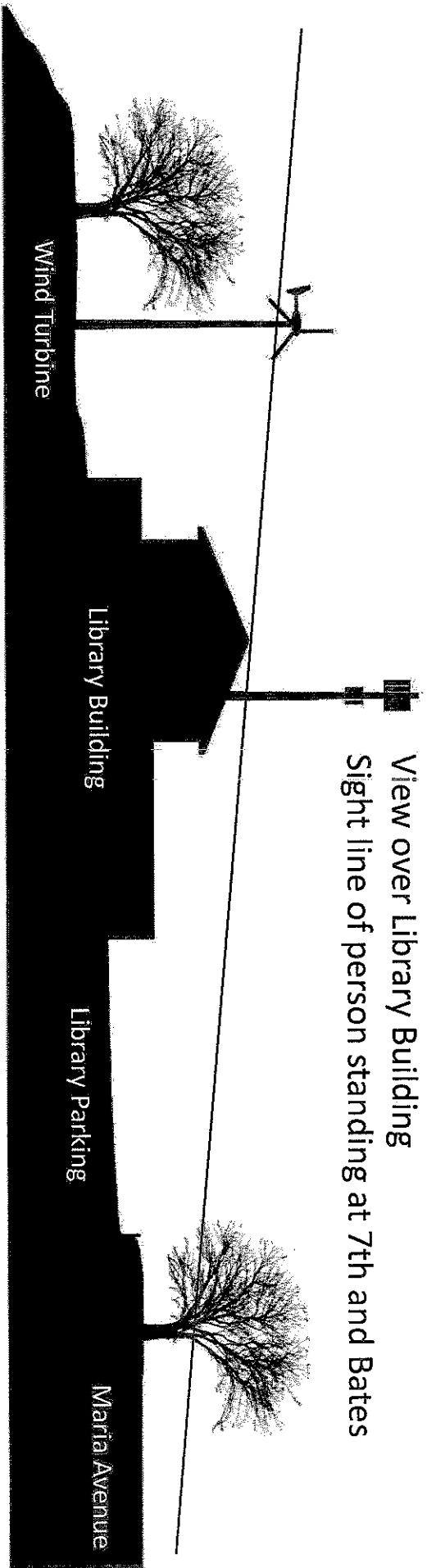
**Metro State University**  
Dimensioned Location of Wind Turbine



**Metro State University**

**Aerial View of Wind Turbine Location**

Location of Wind Turbine



View over Library Building  
Sight line of person standing at 7th and Bates

Wind turbine - 120' above grade  
Library - 76' roof height  
Cell tower - 157' above grade

**Metro State University**  
Site Section - Wind turbine relative to adjacent site



Top of Wind Turbine

**Metro State University**

View toward Wind Turbine from North and Fountain



**Metro State University**

View toward Wind Turbine from 7th and Maria





Top of Wind Turbine

**Metro State University**


View toward Wind Turbine from across Swede Hollow

## **Attachment 2**

# Dayton's Bluff Historic District Map



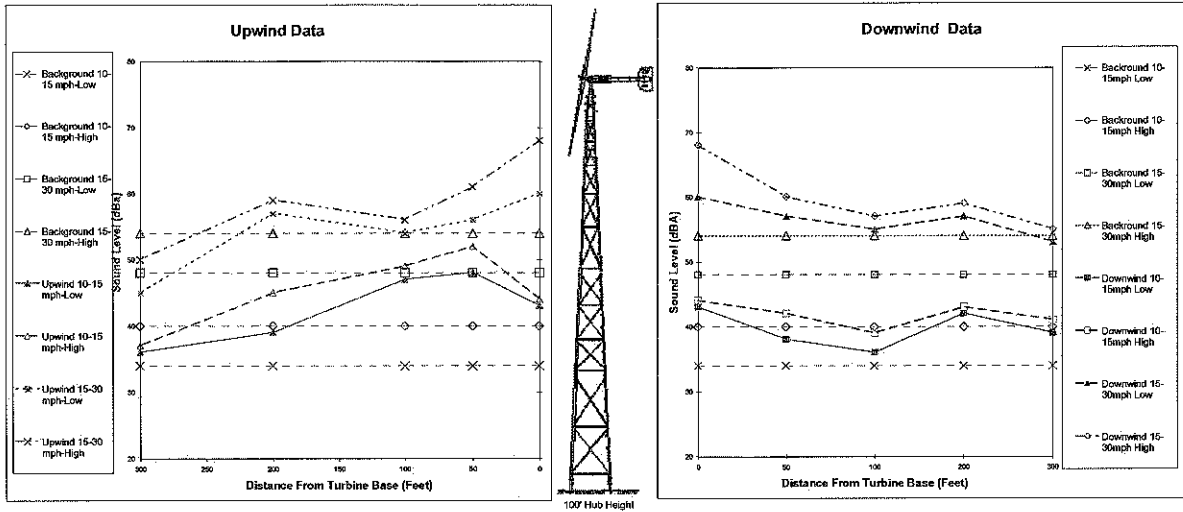
District Boundary  
Historic District boundaries as approved 1992.

 = Approx Area of University Property

# Attachment 3

# WTIC Jacobs 31/20 Wind Turbine Sound Level Measurements

Measurement and Data Analysis supervised by John Hippensteel, PE of Lake Michigan Wind & Sun, Ltd.  
 Lake Michigan Wind & Sun, Ltd is a design / build engineering firm with over 25 years of experience in the wind industry  
 Measurements taken in Sept. of 2007

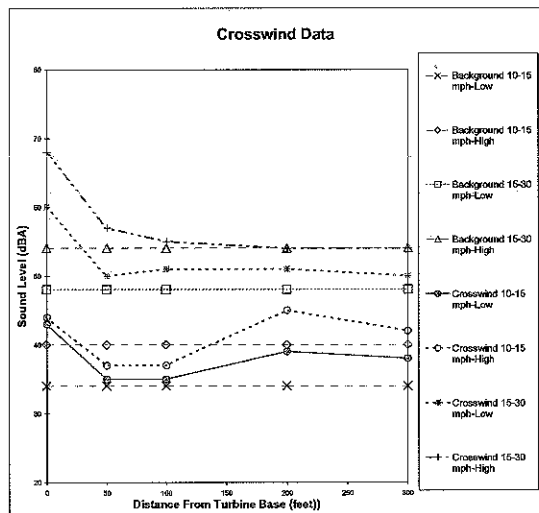


## Summary:

The graphs illustrate that at 100 feet, and greater distances, sound is typically 5dBA or less than the higher background sound range. Differences in sound of less than 3 dBA are not readily apparent to the human ear. In most cases the sound level was not noticeably above background levels, although the turbine sound is of a frequency that could be heard.

The data illustrates the sound level variations with wind speed for the turbine and background. In higher winds the turbine appears louder, as does the background sound. The difference between the turbine sound level and the background sound level decreases with distance from the turbine. The turbine sound level is typically indistinguishable from background sound at distances between 250 & 300' for the sample wind speed ranges.

The WTIC Jacobs 31-20 Wind Turbine is a relatively low rpm and blade tip speed. This in part provides the characteristics of a relatively low sound level as compared to many other small wind turbines.



## Notes and Findings:

Measurements were taken using a Bruel & Kjaer Model 2232, IEC 652 type 1, Sound Meter.

The measurements were taken in wind speed ranges of 10 to 15 mph and 15 to 30 mph ranges. In these wind speed ranges high and low sound data measurements were taken in the same time frame and graphed. Because wind and sound are not static, the changes in wind speeds within these ranges during the test can skew data somewhat

Sound measurements were conducted on a WTIC Jacobs 31/20 Wind Turbine on a 100' tower. It is expected that the relative sound from a unit on a 120' tower would be slightly lower and the relative sound from a unit on an 80' tower would be slightly higher, in the same wind regime.

Sound measurements were conducted in relatively wide open flat hay field (after harvest) with little ground cover and very few trees within 500'. Should the turbine be placed in a corn field it would be expected that the background sound levels would be noticeable higher and the sound from the turbine less noticeable. A similar effect would be noticeable with other forms of vegetation as such a pine trees, which produce quite loud background sound in high winds. Increased vegetation typically produces higher background sound and adds a dampening effect for the sounds from wind turbines.

The steel pole building next to the turbine would have minimal effect on the sound measurements, and this overall setting would be considered to be typical for wind turbine installations.

The downwind measurement point at 200 feet is in proximity to a few trees, causing an increase in background sound level. Background readings of trees was 55-60 dBA at the 15-30 mph wind regime.

# Attachment 4

A Study of the Potential Effects of a Small Wind Turbine on Bird  
and Bat Mortality at Tom Ridge Environmental Center  
Erie, Pennsylvania

Kenneth W. Andersen  
Gannon University

12 December, 2008

## INTRODUCTION

In 2006 the Pennsylvania Department of Conservation of Natural Resources (DCNR) elected to place a 10 kW wind turbine at Tom Ridge Environmental Center (TREC) and six other environmental centers within the commonwealth for the purpose of enhancing public education about alternative energy sources. The 120 ft. unit was erected in early May, 2007 (Fig. 1, 2). Because there is evidence of bird and bat kills at some sites with much larger generating turbines (mW) (e.g., <http://www.abcbirds.org/conservationissues/threats/energyproduction/wind.html>) the DCNR wanted to know if there was reason to be concerned about erecting smaller units. A survey for literature that addressed this issue revealed no formal studies and only a few anecdotal reports which indicated that they do not present a threat to birds and bats (e.g., [www.bergey.com/](http://www.bergey.com/); [http://www.awea.org/smallwind/faq\\_general.html#Dosmallwindturbineskillbirds](http://www.awea.org/smallwind/faq_general.html#Dosmallwindturbineskillbirds)).

An investigation of the effect of the wind turbine unit at TREC on bird and bat mortality was initiated in fall, 2006 and continued through spring, 2008. Besides monitoring for carcasses of birds and bats in the vicinity of the tower, the study determined what species of birds and bats occurred in the immediate area and evidence of their activity near the tower. This report provides an overview of the study and its results while specific investigations on bird and bat activities at the site continue to be analyzed for subsequent publication.

## THE STUDY AREA

The TREC is located on a bluff near Lake Erie (42.1098°N, 80.1538°W) near the entrance to Presque Isle State Park (PISP), Erie County, Pennsylvania. Its location occupies the site of a former outdoor movie theater. To its north the terrain drops steeply



into Scott Run which drains into Presque Isle Bay. Deciduous trees and shrubs dominate the vegetation of the slope and a narrow band of trees occur on the lip of the bluff (Fig. 3, 4). A seven acre parking lot designed to accommodate several hundred vehicles and landscaped with young native trees, shrubs, and herbaceous plants occupies space to the south of TREC, while the wind turbine stands on a grassy knoll approximately 35 yards to the southeast of the building (Fig. 1).

## METHODS

### **Survey of birds**

Two types of bird surveys were conducted. One was through direct observations with identifications made by either sight or song recognition. Observations were made as the surveyor slowly walked through the area over a period of one hour per visit. Multiple visits were made monthly from October, 2006 through early October, 2007 (Table 1). Besides the identification of species present their activity and habitat usage were also recorded (Table 2).

The other survey involved the recording of the night flight calls of migrating birds through the use of microphones mounted on the roof of TREC (Figs. 5, 6) during the periods of 1 June-11 October, 2007 and 17 April-16 June, 2008. The calls were recorded and stored on computers for later analysis (Fig.7). The construction of microphones followed the general design presented by Old Bird (2005). Four of these microphones were placed on the roof for monitoring in 2007. In spring, 2008 the monitoring was switched to one microphone mounted on the top of the TREC observation tower and one on the theater roof.

### **Survey of bats**

The presence of bats was determined at night by recording their ultrasound calls through the use of an AR 125 Ultrasonic Receiver (Binary Acoustic Technology) and laptop computer. The system was programmed to turn on each night near sunset and to turn off near sunrise. Recordings were made from 5 June-29 October, 2007 and 20 April-15 July, 2008. The system was mounted approximately 8 ft. off ground under the protection of a loading port roof at TREC and was approximately 28 yards from the base of the tower. The detector was contained within weather proof housing and was aimed to collect high frequency sounds from an area between the port and the wind turbine (Fig. 8).

### **Search for carcasses**

Searches for carcasses of birds and bats was initiated on 25 May, 2007 and continued on a nearly daily basis through 7 July 2008 when the study ended (DCNR employees continue to monitor the site daily as of this writing). The search area included the mowed grassy area around the turbine tower and part of the adjacent parking lot (Fig. 1). Its perimeter was roughly a radius of 30 yards from the tower base. The survey was conducted by walking along lines approximately 10 ft. apart in early morning and sometimes at night to help ensure that specimens were not removed by scavengers before the morning check. Nocturnal surveys, requiring approximately 1 hour per visit, were conducted May and June, 2008 on the following dates and times: 11:00 pm---June 1,2,4,8,9,11,12,14-17,24-28; 11:30 pm---May 25,27,30,31, June 1; 3:00 am---May 29, June 1,2,14,16,19-22. Because May and June are months of heavy migration, the morning surveys occurred at sunrise to mitigate the possibility of carcasses being removed by scavengers. Otherwise, morning surveys were generally conducted between the hours of 7:00 and 8:00 am.

The possible presence of scavengers was monitored with an infra-red motion sensing camera (Silent Image, Model RM30) installed near the facility in such a way as to cover a portion of area between the bluff and tower. It was operational on 14 nights from 29 May through 30 June, 2007.

## RESULTS

One bird, a common grackle (*Quiscalus quiscula*) was found dead in the search area on 2 July, 2008 and sent to the Pennsylvania Game Commission for evaluation. The cause of its demise is undetermined but no external injuries were noted. No other bird or bat carcasses were noted throughout this study.

The survey camera was limited to scanning roughly one quarter of the total area being surveyed for carcasses. During the 14 nights of running it recorded a white-tailed deer (*Odocoileus virginianus*) on 29 May, a raccoon (*Procyon lotor*) on 12 June, and a woodchuck (*Ondatra zibethicus*) on 22 June. Throughout the study raccoons and striped skunks (*Mephitis mephitis*) were occasionally noted by the author and anecdotal reports of the presence of these species in the vicinity were given by employees of TREC. No other potential scavengers such as fox and feral cats were seen at the site.

Over 250 species of birds have been reported being present at Presque Isle State Park (McWilliams and Brauning, 1999), and because of the close proximity of TREC to PISP it is probable that at some time many of these could be present or at least fly over the study area. Our inventory of the site revealed the presence of at least 83 species, of which 19 species gave evidence of using the general area of the site during the period of reproduction (Table 1). A small colony of bank swallows (*Riparia iparia*) nested in a bank close to the tower during summer 2007 and 2008 (Fig. 9). Many individuals of this species were often observed aerial feeding on a regular basis at the height of the turbine

and close to it. During the survey approximately 35 percent of all bird species were in flight and 12 percent were observed at heights of 75 feet or greater. The majority were observed feeding or resting in vegetation or ground (Table 1).

Unfortunately, the sensitivity of the four microphones installed to record nocturnal flight calls appear to have been enough different to prevent comparisons between them (Lanzone, et. al., 2007). However, based primarily on results from one microphone, number 1 (Fig. 5), the number of calls averaged highest just prior to sunrise and were lowest in early night hours. In fall, 2007 the peak in call rates occurred in mid September and tapered to few by 11 October. A mix of sparrows, warblers, and thrushes made up the vast majority of the calls. Recordings for spring, 2008 are still being analyzed and preliminary results show that from mid-April through mid-June there was a steady movement of migrant songbirds (warblers, sparrows and thrushes) over the site (Lanzone, in prep). Calls were recorded every night from 18 April through 12 June but the number of calls recorded dropped to just 1-7 per night after 24 May. The highest number of calls recorded in one night was the night of 1 May with 200 calls. An average of 34 calls was recorded 18 April-24 May. Additional calls of unidentified shore birds were recorded in low numbers in May and June as well.

Nightly activity of bats was recorded at the site beginning in mid-April and ended in mid- October. Bat activity was recorded nightly From 5 June until 29 October, 2007. Nightly recordings were resumed on 19 April, 2008 and continued through 7 July, 2008. The six species that were tentatively identified through call identification include hoary bat (*Lasiurus cinereus*), red bat (*Lasiuris borealis*), silver-haired bat (*Lasionycteris noctivagans*), eastern pipistrell (*Pipistrellus subflavus*), big brown bat (*Eptesicus fuscus*),

and little brown bat (*Myotis lucifugus*). The identity confirmation and activity of these species during the periods of recordings is currently under study (Andersen, in prep).

## DISCUSSION

Evidence from this study suggests that the probability of bird and bat mortalities being caused by collisions with small monopod wind turbines is low. The apparent absence of multiple deaths of birds or bats at the other six sites (H. Leslie, pers. comm.) supports this evidence. At the TREC site a diversity of songbirds are using the area daily without turbine related casualties (Table 1, 2) and the same is apparent with bats that are active nightly during their seasonal occurrence (Andersen, in prep).

That some birds and bats may have been killed by colliding with the unit but not found during daily surveys is possible. The confirmation of the presence of raccoon and striped skunk at the site on occasion suggests that carcasses could have been scavenged by these mammals. However, on the few occasions that skunk were known to be present they would be searching the ground for grubs and other invertebrates. When observed, the raccoons always appeared to be in transit rather than searching for food. Although the elevation of flight for migrating birds at night was not ascertained for the site, it is generally shown that they are above 100 meters (see Barclay, et al, 2007). An exception may be when very low clouds would cause them to fly lower. Such conditions were not recorded at the site during this investigation. Diurnal bird flight often is at much lower levels as witnessed at the site. However, our observations recorded no collisions with the tower or turbine blades during the day. Migrating bats tend to fly lower than birds and those individuals recorded throughout the spring and summer seasons while flying in the vicinity of the tower were generally at tower height or lower because the maximum range of the detector being used is estimated to be approximately 125 ft. (Donovan T., et. al,

2007). As with birds during daylight the bats apparently avoided collisions with the facility.

A study of the effects of wind tower heights and blade sizes on rates of bird and bat mortalities found that towers shorter than 65 m caused relatively few deaths (Barclay, E. F., et al., 2007). This, along with the apparent lack of the reports of multiple deaths associated with small wind turbines supports our findings.

Table 1. Dates for bird surveys at TREC and numbers of species observed at key points of sighting.

Date	Parking Lot <sup>5</sup>	Lawn <sup>1</sup>	Ravine/Edge <sup>2</sup>	Overhead High <sup>3</sup>	Overhead Low <sup>4</sup>
10/23/2006	0	2	6	1	2
10/27/2006	0	0	0	1	1
10/30/2006	0	1	9	0	5
11/6/2006	0	2	9	0	2
11/15/2006	3	0	3	0	2
11/20/2006	0	1	2	1	0
11/27/2006	2	0	5	2	4
12/4/2006	1	1	8	2	5
12/11/2006	1	5	12	1	3
12/19/2006	1	0	6	0	1
1/2/2007	3	1	4	0	2
1/15/2007	2	1	8	2	3
1/28/2007	0	0	4	0	1
2/12/2007	2	0	5	0	1
2/19/2007	1	0	6	1	0
2/26/2007	2	1	8	0	1
3/5/2007	2	0	7	2	3
3/12/2007	2	1	9	9	9
3/13/2007	0	0	0	9	11
3/20/2007	3	1	11	4	7
3/21/2007	1	0	1	2	7
3/22/2007	0	0	0	8	10
3/24/2007	0	0	0	1	1
3/26/2007	3	4	10	5	24
4/9/2007	5	3	12	2	3
4/16/2007	1	2	5	3	4
4/22/2007	5	10	16	1	3
4/23/2007	0	1	1	13	16
4/29/2007	3	3	13	2	6
5/7/2007	7	6	19	5	7
5/14/2007	7	6	14	3	9
5/28/2007	5	2	19	3	6
6/11/2007	3	4	15	3	6
6/18/2007	11	6	11	5	8
6/24/2007	6	5	16	3	3
7/2/2007	5	5	15	1	5
7/9/2007	4	2	10	1	4
7/23/2007	6	4	9	2	7
8/1/2007	9	6	12	3	4
8/6/2007	4	1	9	2	3
8/13/2007	6	2	4	2	6
8/21/2007	5	5	8	3	4
8/27/2007	10	3	6	3	5
9/10/2007	4	3	10	2	5
9/17/2007	1	1	9	6	2
9/23/2007	3	1	9	2	6
9/24/2007	3	0	6	0	2
10/15/2007	5	2	14	2	2
10/22/2007	2	1	8	3	1
Summed	149	105	403	126	232
	0.14679803	0.103448276	0.397044335	0.124137931	0.228571429
Approx usage	15%	10%	40%	12%	23%

<sup>1</sup>all grassy areas adjacent to TREC; <sup>2</sup>tree line and general area of Scott Run; <sup>3</sup>above the top of TREC observation tower (approx. 75 ft.); <sup>4</sup>below the top of TREC observation tower; <sup>5</sup>number or species observed during 1hr. of observation

Table 2. Bird Species Observed at TREC, 23 October 2006-22 October 2007

Double-crested Cormorant	<b>Ruby-throat Hummingbird</b>	<b>Eastern Bluebird</b> <sup>3</sup>
Great Blue Heron	<b>Red-bellied Woodpecker</b>	<b>Wood Thrush</b>
Canada Goose	<b>Yellow-bellied Sapsucker</b>	Swainson's Thrush
Wood Duck	<b>Downy Woodpecker</b> <sup>3</sup>	Hermit Thrush
Mallard	<b>Hairy Woodpecker</b>	<b>American Robin</b> <sup>3</sup>
Northern Pintail	<b>Northern Flicker</b>	<b>Gray Catbird</b> <sup>3</sup>
Unidentified Waterfowl	<b>Pileated Woodpecker</b>	<b>Brown Thrasher</b>
Turkey Vulture <sup>1</sup>	<b>Eastern Phoebe</b> <sup>3</sup>	<b>Cedar Waxwing</b>
Black Vulture <sup>1</sup>	<b>Eastern Wood-Pewee</b>	<b>European Starling</b> <sup>3</sup>
Osprey <sup>1</sup>	<b>Great Crested Flycatcher</b>	<b>Yellow Warbler</b> <sup>3</sup>
Bald Eagle <sup>1</sup>	Unidentified Flycatcher	Wilson's Warbler
Northern Harrier <sup>1</sup>	<b>Warbling Vireo</b>	<b>Scarlet Tanager</b>
Sharp-shinned Hawk <sup>1</sup>	<b>Red-eyed Vireo</b>	<b>Northern Cardinal</b> <sup>3</sup>
Cooper's Hawk <sup>1</sup>	<b>Purple Martin</b>	Rose-breasted Grosbeak
Unidentified Accipiter <sup>1</sup>	<b>Tree Swallow</b>	<b>Eastern Towhee</b>
Red-shouldered Hawk <sup>1</sup>	<b>Barn Swallow</b>	American Tree Sparrow
Broad-winged Hawk <sup>1</sup>	<b>Bank Swallow</b> <sup>3</sup>	<b>Chipping Sparrow</b> <sup>3</sup>
Red-tailed Hawk <sup>1</sup>	<b>Blue Jay</b> <sup>3</sup>	Field Sparrow
Rough-legged Hawk <sup>1</sup>	<b>American Crow</b> <sup>3</sup>	<b>Song Sparrow</b> <sup>3</sup>
Unidentified Buteo <sup>1</sup>	Common Raven <sup>1</sup>	White-throated Sparrow
American Kestrel <sup>1</sup>	<b>Black-capped Chickadee</b> <sup>3</sup>	White-crowned Sparrow
Merlin <sup>1</sup>	<b>Tufted Titmouse</b> <sup>3</sup>	Dark-eyed Junco
Peregrine Falcon <sup>1</sup>	<b>White-breasted Nuthatch</b>	<b>Red-winged Blackbird</b>
<b>Wild Turkey</b> <sup>2</sup>	Red-breasted Nuthatch	Eastern Meadowlark
<b>Killdeer</b> <sup>3</sup>	<b>Brown Creeper</b>	<b>Common Grackle</b>
<b>Ring-billed Gull</b>	<b>Carolina Wren</b>	<b>Brown-headed Cowbird</b> <sup>3</sup>
<b>Herring Gull</b>	<b>House Wren</b> <sup>3</sup>	<b>Baltimore Oriole</b> <sup>3</sup>
Unidentified Gull/Tern	Winter Wren	<b>House Finch</b> <sup>3</sup>
<b>Mourning Dove</b>	Golden-crowned Kinglet	<b>American Goldfinch</b>
<b>Chimney Swift</b>	Ruby-crowned Kinglet	<b>House Sparrow</b> <sup>3</sup>

<sup>1</sup>Species observed and identified on one or more of the following dates: 3/22, 3/26, 4/23, 2007 (J. McWilliams, pers. com.).

<sup>2</sup>Species in **bold** were observed during the potential breeding season of May- mid-August.

<sup>3</sup>Evidence of site usage for breeding (e.g., nests, fledglings) was identified for these species.





Fig. 1 The TREC parking lot and adjacent site of the wind turbine tower.

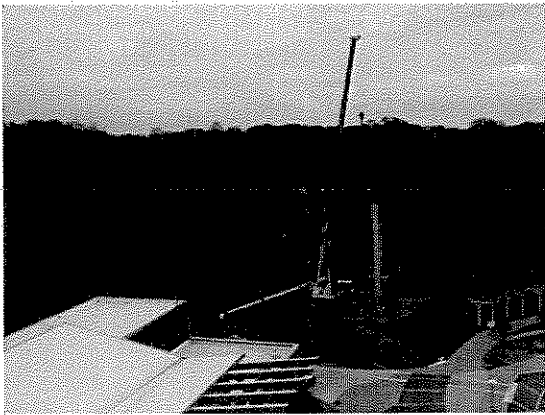


Fig. 2 The tower under construction May 5, 2007



Fig. 3 The wooded edge of Scott Run



Fig. 4. Wooded edge of Scott Run behind TREC

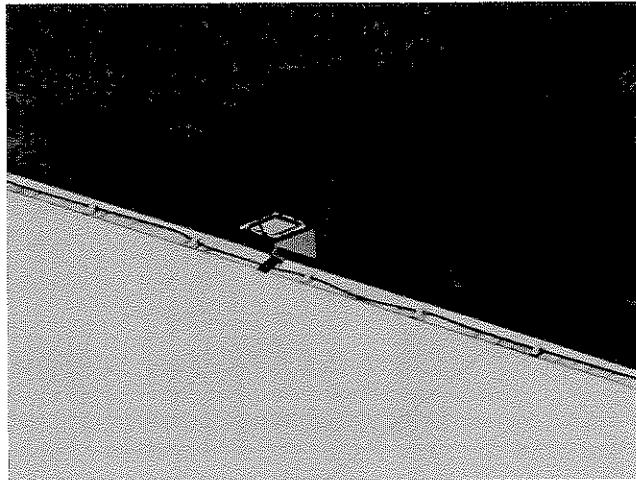


Fig. 5. Number 1 microphone attached to the roof of TREC near the west end of the building.



Fig. 6. The white bucket contains Number 4 microphone located on the roof of TREC at the SE end of the building.

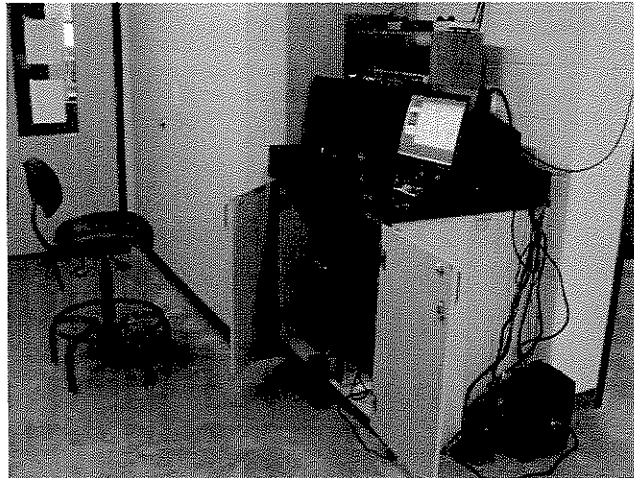


Fig. 7. The monitoring station for microphones placed on the TREC roof.



Fig. 8. The ultrasound bat detector and laptop computer mounted on the TREC port. The arrow points to the weather proof housing containing the detector.



Fig. 9. Nests of bank swallows located on a cliff just east of the tower.

## Literature Cited

- Andersen, K. W. Bat activity at Tom Ridge Environmental Center, Erie, Pennsylvania. In Prep.
- Andersen, K. W. 2007. Small wind turbines, birds and bats: a study underway at TREC. Abstract. Regional Science Consortium 3<sup>rd</sup> Annual Research Symposium
- Barclay, R., M. R., Baerwaid, E. P., and Gruver, J. C. 2007. Variation in bat and bird fatalities at wind energy facilities: assessing the effects of rotor size and tower height. *Can. J. Zool.* 85:381-387.
- Donovan T., K. Watrous, D. Olufson. 2007. Field Tests of Acoustical Monitoring for Bats. [http://www.uvm.edu/envnr/vtcfwru/Current\\_Projects/acoustics.htm](http://www.uvm.edu/envnr/vtcfwru/Current_Projects/acoustics.htm)
- Lanzone, M. Analysis of nocturnal flight calls of migrant birds at Tom Ridge Environmental Center, Erie, Pennsylvania. In Prep.
- Lanzone, M., Coulter, B. DeLeon, E., and Grove, L. 2007. A preliminary report of flight calls recorded at Tom Ridge Environmental Center. Unpublished Manuscript, 13 pp. Powdermill Avian Research Center Bioacoustics Lab.
- McWilliams, G. M., and D. W. Brauning, 1999. *The birds of Pennsylvania*. Comstock Publ. Assoc. Ithaca, NY.
- Old Bird. 2005. Microphone design and building instructions. [http://www.oldbird.org/mike\\_home.htm](http://www.oldbird.org/mike_home.htm)
- Spittler, J., Andersen, K. W., Ropski, S. 2007. Bat activity near a small wind turbine: a study underway at TREC. Abstract. Regional Science Consortium 3<sup>rd</sup> Annual Research Symposium.

### Acknowledgements

The author thanks each of the following for their contributions to the fulfillment of this study: Katie Andersen, Greg Andraso, Jerry Covert, Mike Lanzone, Harry Leslie, Jerry McWilliams, Steve Ropski, several biology students from Gannon University and various DCNR employees who assisted in the carcass surveys and installation of microphones. The study was financed through DCNR grants to the Regional Science Consortium. Facilities at the Powdermill Avian Research Station were used for analysis of nocturnal bird calls.

# Attachment 5



# Audubon MINNESOTA

July 31, 2008

TO: Ralph Jacobson  
RE: Wind Generator at Metro State

Dear Mr. Jacobson;

Thank you for taking the time to bring to my attention the plans to install one wind generator at Metro State University in St. Paul. Since Metro State University is located just outside the Mississippi River-Twin Cities Important Bird Area and next to Swede Hollow Park there is the potential for significant bird movement through the area.

After reviewing the site plans with you, discussing this location with others knowledgeable about the birds in the area, and visiting the site last week, I have come to the conclusion that the area where the generator is proposed to be located should not pose a hazard to local or migratory birds. However, it should be noted that without actually monitoring the site it is impossible to say with certainty that this is the case.

The Mississippi River is an internationally important bird migration corridor and the protection of its habitats and birds is of the highest priority to Audubon Minnesota. At the same time we support the use of renewable and carbon free power sources such as wind generators. Assuming the use of bird-friendly best practices in design and construction I see no reason why this structure should pose a hazard to migratory birds. If siting or other circumstances change I would appreciate a chance to review those plans.

Thank you for your interest in protecting migratory birds.

Sincerely,

Mark Martell  
Director of Bird Conservation  
mmartell@audubon.org



# Attachment 6

MACALESTER COLLEGE



THE HIGH WINDS FUND  
1600 GRAND AVENUE  
SAINT PAUL, MINNESOTA  
55105-1899

TEL: 651-696-6552  
FAX: 651-696-6250  
E-MAIL: [highwinds@macalester.edu](mailto:highwinds@macalester.edu)  
[www.macalester.edu/highwinds/](http://www.macalester.edu/highwinds/)

February 14, 2012

Ms. Kate Reilly  
Department of Planning & Economic Development  
1300 City Hall Annex  
25 West 4th Street  
Saint Paul, MN 55102

Re:#11-310-568 – Metropolitan State University Wind Turbine Proposal

Dear Ms. Reilly:

Please share this letter with members of the Zoning Committee and Planning Commission who will be considering the proposal from Metro State University to install a campus wind turbine.

Macalester College applied for the necessary variances and permits to erect a wind turbine in 2003. It was the first turbine in St. Paul and, as such, received only a temporary 'similar use' permit which was reviewed after a year of operation. Our turbine is situated near the Olin-Rice Science Center on the southern end of campus on the Snelling Avenue side. It is within 500 feet of residences on Snelling and Osceola Avenues and a few hundred feet from the stadium dormitory. The wind turbine was installed by Innovative Power Systems, a Saint Paul company.

When we first proposed erecting a wind turbine there was no small amount of objection from concerned neighbors. We held several meetings with nearby residents and the Macalester-Groveland Community Council. Several of our neighbors both east and west of campus testified before the Planning Commission and its committees in opposition to the wind turbine.

The issues raised were mainly about public safety and the urban environment: Concerns about noise, flickering light, falling parts, ice flinging off blades as well as potential harm to bird and bat populations. With unclear evidence about the concerns raised, the Planning Commission granted only a temporary permit to Macalester. As it turns out none of the issues raised during the temporary permitting process were of concern to neighbors after installation. In fact, when Macalester returned to the Planning Commission to make permanent its temporary permit, there was no opposition to granting a permanent permit. Nine years after installation, the wind turbine continues to operate without complaint.

Please contact me if you have questions or need more information.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Welna".

Tom Welna  
Director