

2011 SENATE NATURAL RESOURCES

SB 2206

2011 SENATE STANDING COMMITTEE MINUTES

Senate Natural Resources Committee
Fort Lincoln Room, State Capitol

SB 2206
January 21, 2011
13209

Conference Committee

Committee Clerk Signature

Veronica Spaulding

Explanation or reason for introduction of bill/resolution:

Relating to anemometer towers; to provide a penalty; and to provide for application

Minutes:

Written Testimony Attached

Chairman Lyson: Opened the hearing on SB 2206.

Senator Joe Miller introduced the bill. It is a safety issue for the aviation industry. Farmers who depend on aerial spraying want their aerial applicators to be safe.

Chairman Lyson: Do you have any idea of the cost to paint the existing anemometers?

Senator Joe Miller, District 16: To buy and erect a new anemometer tower with all of the safety equipment on it would cost \$25,000 to \$30,000. To upgrade an existing tower, I would assume you would have to take it down and get the safety equipment on it. That would probably cost you \$10,000 to \$15,000. That is just a guess.

Chairman Lyson: Do you know how many towers are up right now?

Senator Joe Miller: No.

Larry Taborsky, the Director of the Aeronautics Commission, presented written testimony in favor of SB 2206. See **Attachment #1.** (audio 5:40 to 12:12).

Chairman Lyson: How many of these towers do we have?

Larry Taborsky: We have a rough estimate of 1000 in the state. It is tough to tell because companies are considering it somewhat proprietary at this point. They are still testing to evaluate to see if it's a good location for the wind turbines.

Chairman Lyson: Do they have to get a permit to put these up?

Larry Taborsky: They just have to get permission from the landowner.

Chairman Lyson: What is the height of these towers?

Larry Taborsky: The height is generally below 200 feet because at the 200 foot mark the FAA requires some kind of an inspection and they will require you to mark them.

Chairman Lyson: Can you tell me what the towers are used for?

Larry Taborsky: They are used to determine the quality of the wind in that area to see if it is a viable place to put up a wind farm.

Chairman Lyson: So it is not the farmers putting up the anemometer towers?

Larry Taborsky: No, it is the company that would be putting up the wind farms. Before they have the big structures that everyone sees, someone has gone ahead of time to investigate and choose the prime location for it.

Senator Hogue: Does the cost of \$25,000 for red and white striping sound accurate to you?

Larry Taborsky: Yes, that is close. \$2500 to \$3000 is typical for the whole schema. It is between 1% and 5% of the cost of the towers themselves.

Senator Hogue: You mentioned the aerial sprayers and the Game and Fish personnel, would there be any other type of aircraft that would fly at that low altitude?

Larry Taborsky: Anyone can fly at that low altitude, including Emergency Medical personnel. It was EMS people that took all the pictures that I used. They are very concerned about this.

Chairman Lyson: Have you talked to the wind people to see if they would be willing to add lights and paint to the towers on their own?

Larry Taborsky: We have done it informally. We sent letters requesting that. There have been a few volunteers. It is cheaper not to do it.

Senator Schneider: The FAA has not taken any action to regulate these towers. Is there any risk that we could be noncompliant when they do start regulating?

Larry Taborsky: The intent of the FAA is they will not get into the jurisdiction below 200 feet, but they are not going to inhibit the states from doing it either.

Brian Rau, representing the North Dakota Agricultural Aviation Association, presented written testimony in favor of the bill. See **Attachment #2.**

Senator Uglem: Do you intentionally want to exclude towers for farm use and other towers that might be similar?

Brian Rau: I can best address your question by saying we intentionally want to include just the Meteorological Evaluation (MET) Towers. The towers farmers put up have indications that they are there. MET towers are the ones that are hard to see.

Matt Hovdenes, an aerial applicator in Grandin, ND, and current president of ND Aerial Applicators Association and member of ND Aviation Council presented testimony in favor of the bill. See **Attachment #3**, a letter from Donald Larson.

Bob Simmers, President and co-owner of Bismarck Aero Center spoke in favor of the bill. He is an agricultural aviation applicator. He spoke from his personal experience last summer in SW North Dakota providing aerial application to farmers in that area. Part of the training is to survey the field to formulate a plan of how to best apply the pesticide. He had made the survey and formulated the plan in the evening, When he came back in the morning and did the application, a tower had appeared out of nowhere. He is a seasoned applicator and realizes the danger involved in unregulated towers springing up.

Jeff Faught, President of the International Association of Natural Resource Pilots presented written testimony in support of SB 2206. See **Attachment #4**.

Senator Hogue: WY and SD have already passed legislation requiring some marking of the towers. Can you describe what those two states have required?

Jeff Faught: SD requires painting three rings of color at the top. I am not sure what WY requires, but I suggest painting the whole thing.

Paul Vetter with Executive Air Taxi spoke in favor of the bill. Executive Air Taxi provides emergency helicopter services for the state. Anything that would identify the towers for our pilots is a benefit. We don't want to endanger the lives of our medical crews that are going out to pick up people who need assistance.

Chairman Lyson, (asking **Larry Taborsky** the Director of the Aeronautics Commission): When they put a tower up, do they have to ask anyone other than the land owner?

Larry Taborsky: No, not at this time.

John Olson, representing Nextera Energy, a company that does a lot of wind tower construction and testing in North Dakota spoke in opposition to the bill. Nextera has about 1000 megawatts of wind power development in the state right now and has \$1.5 billion invested in the state. They currently have 70 anemometer towers. Nextera has a problem with the bill. There are so many towers that would have to be retrofitted to meet the requirements in this bill. My understanding is that these are temporary towers put up to test the velocity of the wind for possible development of a wind farm in that area. I am told that they are up for 2 to 5 years at the most. With 70 MET towers already up, that is a lot to take down to meet the standards imposed in this bill. First provision A bands of red and white does not pose the greatest difficulty. B two marker balls. Nextera feels there is danger with marking balls. They ice up, cause weight, also change accuracy of the information the tower collects. C the area surrounding the point where a guide wire is anchored to the ground must have a contrasting appearance with the surrounding vegetation. It must be

fenced for an area not less than 64 square feet. Some farmers don't want that because of the weed problem. What does contrasting mean? D safety sleeves. We can look at that E relates to the strobe light. The strobe light shown with the inexpensive strobe light sounds good but that strobe light cannot be monitored. You would have to go to something more technologically advanced and that carries the added expense. Section 2 relates to the retroactive application and gives companies a year or so to become compliant. We would be opposed to that. Basin Electric has done studies on the cost of this. The added cost of new towers would be \$6,500 to \$24,000 and the cost of retrofit would be \$9,000 to \$26,000. My company has looked at that. To retrofit 70 towers would be a minimum of \$700,000, to \$2 million.

Chairman Lyson: Do the towers have electrical power to them now?

John Olson: Most likely not, they are in remote locations.

Senator Schneider: Would it be difficult for Nextera to provide notice as to where these towers are?

John Olson: I think that is a good question. We need to look into that. There is a lot of competition among the wind development companies. They are not sharing that proprietary information.

Dale Niezwaag presented written testimony in opposition to SB 2206. See **Attachment #5 and #6**. In reference to lighting, the light has to be one which could be monitored. That type of light adds a lot of cost to the tower. (48:36 to 49:15 on the audio)

Chairman Lyson: We would like to see the wind energy, yet we want it to be safe. At least they should have to plot the location they are going up.

Senator Triplett: Can you help me understand the attachment? The range on the subtotal in Attachment #6. Audio 50:26 to 52:15

Senator Hogue: I don't see any payment to the landowner. What do you pay the landowner?

Ron Rebenitsch, Manager of Alternative Technologies for Basin Electric and Project Manager for the wind projects that we have developed: We typically pay a landowner up front \$1000 to \$2000 for two years.

Senator Hogue: This proposal doesn't regulate other structures, what are the other structures?

Dale Niezwaag: There are free standing cell towers and even some buildings. It is regulating anemometer towers now, but would it eventually go to other towers, we don't know.

Ilona Jeffcoat-Sacco, General Council with the Public Service Commission, presented written testimony in opposition to the bill. I am not opposed to safety, just apposed to giving this jurisdiction to the commission. See **Attachment #7**.

Senator Hogue: Question for Basin Representatives.... If this is a measuring device, why does the tower stay up when the wind towers are up?

Ron Rebenitsch They can be left up to provide for verification of productivity of the turbines that are purchased against the warranty. It is good engineering practice to have an independent verification of the wind speeds later on so you know if your turbines are beginning to deteriorate in their capacity. Within the perimeter of the wind farm, each of the towers is taller than the MET tower. The perimeter of the farm is typically lighted as well so within that perimeter you have some notification that the MET tower would be there.

Chairman Lyson: Closed the hearing on SB 2206.

There was one more written testimony in favor of SB 2206 left in the hearing room. See **Attachment #8**.

2011 SENATE STANDING COMMITTEE MINUTES

Senate Natural Resources Committee
Fort Lincoln Room, State Capitol

SB 2206
February 10, 2011
Job Number 14389

Conference Committee

Committee Clerk Signature

Explanation or reason for introduction of bill/resolution:

Relating to anemometer towers; to provide a penalty; and to provide for application.

Minutes:

Attached Testimony

Senator Lyson opens the discussion on SB 2206.

Senator Lyson states that SB 2206 is a "safety bill". This bill would affect the people who fly helicopters and planes.

Senator Miller, District 16, speaks to amendment .2001; they simply move the regulatory responsibility to the Aeronautics Commission. See **Attachment #1**. That is something that "everyone is on board with". The second amendment, **Attachment #2**, leaves the entire bill intact but provides a "grandfather clause" to it and also references Subdivision D, Subsection 2 of SB 2206 in Section 1. That would require that "existing towers would have to have sheaves on their guide wires" and also notify the Aeronautics Commission of their location. That is what the amendment says. However, any new tower that is erected would have to have all the safety things put on it. Another addition to that, I would suggest, is to put a "drop dead date" for towers, such as 2015, that requires that they have all the safety gear attached to them. Apparently there are some towers that have been standing for ten years now and they have been abandoned. I don't want to see a tower just sitting there but maybe we can deal with that in some future legislation. These amendments come from Ag aviation people and they are comfortable with them.

Senator Lyson asks how many towers are out there now.

Senator Miller states a couple of hundred.

Senator Lyson asks, "Aren't they dangerous now?"

Senator Miller states, "Of course they are". That is why the notification to the Aeronautics Commission would provide a data base so we know where they are. The Basin people have "gutted" the bill essentially to take out most of the safety things that we have asked for. The reason why the Ag people are concerned about them is because they want to see these things clearly. The painting is good and a good step but we must have those "balls"

on things and a light would sure help at night. I don't think it is too much to demand that the newly erected towers be fitted with that gear. I would say all new towers get all the safety gear and any existing tower at least have some sheaves on the guide wires to let us know where they are.

Senator Burckhard asks that SB 2206, with the black and red, does that represent what the engineers have done to it?

Senator Lyson states, "No, this is what the companies that put them up came up with". This was given to me by John Olsen.

Senator Triplett states that if I understand the distinction between the two sets of amendments, the one position is "don't make us do anything that costs any money, just let us notify people and then they are on their own to look out for these things, once they are informed of where they are". The other amendment is a combination of "let us know where they are and we will look out for them but let us also be able to see them on the ground". I think where we are at is what amount of emphasis do we want to put on visual identification as opposed to someone giving us the knowledge so we can map it out ourselves. The first point we need to talk about is "which way do we want to go" and then we can tweak either amendment.

Senator Lyson states that they will file a flight plan, if they are going to go someplace, other than sprayers.

Senator Uglem states he believes that for short flights and local flights, no flight plan is filed.

Senator Lyson states he thinks it is important that the aviation people know the location of these towers.

Senator Triplett states that the notion about "notification only", the premise for this regulation would be useful for everyone who is doing things by the book and in order. So if someone is planning to go out and do crop dusting, they could check the database for where they were going to work that day, find out if something is there, plot it on their own maps and deal with it. From that perspective, the notification-only premise works. There are always emergencies that happen in the air. The visual response of having them marked really matters. I am leaning in favor of the amendments that require more of the visual markings.

Senator Hogue states the amendments Mr. Olsen provided, as I read them, would require two of the visuals, painting and markers on the guide wire, and would take out the lights and the having the crop be different on the ground. I tend to think that this is something we should be directing our Aeronautics Commission to implement by rule, rather than trying to do this in statute. I support the bill and the requirements because I think they are dangerous. As far as "grandfathering in" some towers; I can't agree with that, because what we are trying to address is a public danger. If we start grandfathering in towers, we haven't solved the problem for those that are already up. I think this is a reasonable proposal and we should decide do we want to keep "tweaking these" as far as towers or

markers, balls, lights and painting; or should we have a bill that directs the Aeronautics Commission to implement some rules by a "time certain".

Senator Lyson asks if the Aeronautics Commission is a state agency. I think it is. I like Senator Hogue's idea rather than this part. What if the bill says they will make rules?

Senator Triplett states that the bill should have enough detail that it makes some of these points that it needs to relate to the safety of "existing and future towers" so there isn't any questions about "grandfathering" anything in. That does not solve the problem at all.

Senator Schneider states that if we left anything "grandfathered" in, it would make it worse. If pilots are looking for alternating orange and white bands and there is a tower that doesn't have that, we are creating a danger.

Senator Uglem states he does like the law requiring the ND Aeronautics Commission to adopt safety rules for these towers that are below their scope right now. Are they only below the scope of the Federal Aeronautics Commission? Are they the ones that are below the 200 ft.?

Senator Lyson states that he thinks they set it federally but it comes down to the locals too.

Senator Miller states that the Federal Aeronautics Commission controls the towers 200 ft. and higher. That is why there are towers that are 198 ft. tall. The state people, under this authorization, would allow them control. One other point is if no decision is made, there will be no rule for another year.

Senator Lyson states that if it is a "safety thing", I think we can get it done a lot quicker.

Senator Triplett states that we could put an "emergency clause" on the bill, so they could work on it right away and they wouldn't have to wait until July to start. We could give them a "date certain" and they should be able to get it done in 6-9 months.

Senator Lyson states that since this has been brought to our attention, we have to do something. I don't think we can just kill the bill. It is a safety issue and if we don't do anything, we are just as bad as they are.

Senator Hogue states that SB 2206 would put these bills under the Public Service Commission's statutory authority. We are talking about the ND Aeronautics Commission. I wanted to make sure that they had some rule-making authority, as an administrative agency. (Senator Hogue looks in the ND Century Code and determines they do). Under Section 2-05-08, the Commission may perform such acts, issue and amend such orders, and make and promulgate and amend such reasonable rules, regulations and procedures, as it deems necessary. They have the authority to promulgate rules.

Senator Miller states that the reason the Aeronautics Commission is in the amendments is because the PSC does not necessarily have the authority. The PSC does not want this.

Senator Triplett that does seem to be the one point of agreement between these two sets of amendments, as they both want to "change out" and make it the Aeronautics Commission.

Senator Triplett suggests that **Senator Lyson** set up a committee of Senator Hogue and Senator Miller to work this through.

Senator Lyson asks **Senator Miller** if he is willing to work with **Senator Hogue** on reworking SB 2206 and address the changes and come back and present it.

Chairman Lyson: Closed the discussion on SB 2206.

2011 SENATE STANDING COMMITTEE MINUTES

Senate Natural Resources Committee
Fort Lincoln Room, State Capitol

SB 2206
February 11, 2011
Job # 14460 (audio 39:30 to 53:00)

Conference Committee

Committee Clerk Signature

Explanation or reason for introduction of bill/resolution:

Relating to anemometer towers; to provide a penalty; and to provide for application.

Minutes:

one attachment

Chairman Lyson opened the discussion on SB 2206.

Senator Hogue explains for the Senate Natural Resources Committee the proposed amendment for SB 2206. We "hog housed" the bill and directed the Aeronautics Commission to adopt rules to be effective by May 1, 2012. I picked that date because I heard someone say we should put an "emergency clause" on it. However, if the "emergency clause" doesn't carry, then it seems to me that the commission is looking at doing something, beginning the process, in August of 2011. If you are going to promulgate rules, you have to go through a process where you have to provide notices to the public that they are thinking about promulgating the rules. They would have to have a public hearing and then after they get public comment, both at the hearing and written, then they can promulgate these rules. I thought May 1, 2012 would be a reasonable time and then that would work out for the aerial sprayers. I don't know if they would require these towers to be in conformance with the rule that they adopt on the date that the rules are adopted. It is certainly possible that another spraying season would go by without any rules in affect. On the other hand, I know that industry is aware that something is coming, either from legislature or the Aeronautics Commission. So I don't think they are going to sit back and wait for rules to be adopted before they start doing something. That is the amendment. It is a "hog house" amendment that takes out all the specific lights, paints, ball markers and mowing around the anchors for the guide wires and puts it in the hands of the Aeronautics Commission.

Senator Hogue makes a motion to adopt amendment .02003.

Senator Uglem seconds the motion.

Senator Schneider asks, "Is there any wisdom in leaving the database requirement in the statute?"

Senator Lyson states that this amendment was "hog housed". If we did pass this amendment, I would think we should be able to add that portion on to another amendment.

Senator Uglem states that in the amendment the location of these towers is to be reported to the commission. Does the May 1, 2012 date mean they don't have to report them until then or could that portion be acted upon immediately?

Senator Schneider states that the only difference would be January 1, 2012 in the wind industry amendments vs. May 1, 2012. Potentially, by rule, they could do something different than this database that is identified here. It would speed up the establishment of the data base and we would have more control over the requirement for the data base we did by statute.

Senator Hogue states that we could add subsection 3 to the amendment. Is that what you are suggesting?

Senator Schneider states, "Yes, that would be great."

Senator Hogue states that would give them a head start on the safety issue.

Senator Lyson asks if we are looking at the whole thing on 3 or just the first two lines.

Senator Hogue states yes, just the first two lines of 3.

Senator Schneider states that it makes sense to have Subsection 3 and then also A and B below that too, especially the GPS requirement.

Senator Lyson states that there is a motion on the floor.

Senator Hogue states that we should make an amendment to the motion. My amendment would be to add Lines 12-18 on page 2 of the proposed amendments that were submitted to us by Mr. Olson to the bill amendment.

Senator Schneider seconds.

Senator Uglem states that this leaves us with the issue of having one more spraying season without reporting where these towers are, the 2011 spraying season. I would think it would be pretty easy to get them recorded on the database before that happens.

Senator Schneider states that I don't have enough information to determine how long it would take to set up a database.

Senator Lyson states that the companies now know the problem and they are going to cover themselves. Is there any further discussion on the amendment to the amendment?

The amendment to the amendment carried by voice vote.

Senator Lyson asks if there is any discussion on the amendments.

Those that are in favor of the amendment .02003 signify by saying "yes"

Motion carried by voice vote.

Senator Uglem makes a motion to DO PASS AS AMENDED.

Senator Schneider seconds the motion.

Roll Call Vote: 6-0-1

Carrier: Senator Hogue

FISCAL NOTE
 Requested by Legislative Council
 03/31/2011

Amendment to: Engrossed
 SB 2206

1A. **State fiscal effect:** *Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.*

	2009-2011 Biennium		2011-2013 Biennium		2013-2015 Biennium	
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds
Revenues						
Expenditures				\$10,000		\$3,000
Appropriations						

1B. **County, city, and school district fiscal effect:** *Identify the fiscal effect on the appropriate political subdivision.*

2009-2011 Biennium			2011-2013 Biennium			2013-2015 Biennium		
Counties	Cities	School Districts	Counties	Cities	School Districts	Counties	Cities	School Districts
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

2A. **Bill and fiscal impact summary:** *Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).*

Fiscal Note Summary:

Funding to defray the costs of establishing and maintaining a record of anemometer towers within the state, and providing education for pilots on using this web site.

B. **Fiscal impact sections:** *Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.*

Costs:

- 1) Information Technology Department (ITD) costs for developing a database of existing and future towers, and displaying this information on a map which can be accessed through the aeronautics web site by pilots during their pre-flight planning.
- 2) ITD recurring costs associated with hosting this information.

3. **State fiscal effect detail:** *For information shown under state fiscal effect in 1A, please:*

A. **Revenues:** *Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.*

none

B. **Expenditures:** *Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.*

Expenditures - Initial Data Processing - \$7,000

Updating and maintaining web site information- \$3000

Line Item 30

Aeronautics Commission Special Fund (324)

Additional work load for an existing FTE to coordinate updates with information technology staff. Costs are based on predicted 200 towers initially, and smaller numbers added in this biennium.

C. **Appropriations:** *Explain the appropriation amounts. Provide detail, when appropriate, for each agency*

and fund affected. Explain the relationship between the amounts shown for expenditures and appropriations. Indicate whether the appropriation is also included in the executive budget or relates to a continuing appropriation.

In accordance with Senate Bill 2206.

Name:	Larry Taborsky	Agency:	Aeronautics
Phone Number:	701-328-9650	Date Prepared:	03/31/2011

FISCAL NOTE
 Requested by Legislative Council
 03/17/2011

REVISION

Amendment to: SB 2206

1A. State fiscal effect: *Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.*

	2009-2011 Biennium		2011-2013 Biennium		2013-2015 Biennium	
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds
Revenues						
Expenditures				\$100,000		\$13,000
Appropriations						

1B. County, city, and school district fiscal effect: *Identify the fiscal effect on the appropriate political subdivision.*

2009-2011 Biennium			2011-2013 Biennium			2013-2015 Biennium		
Counties	Cities	School Districts	Counties	Cities	School Districts	Counties	Cities	School Districts

2A. Bill and fiscal impact summary: *Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).*

Fiscal Note Summary:

Funding to defray the costs of establishing and maintaining a record of anemometer towers within the state, and providing education for pilots on using this web site.

B. Fiscal impact sections: *Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.*

Costs:

- 1) Information Technology Department (ITD) costs for developing a database of existing and future towers, and displaying this information on a map which can be accessed through the aeronautics web site by pilots during their pre-flight planning.
- 2) ITD recurring costs associated with hosting this information.

3. State fiscal effect detail: *For information shown under state fiscal effect in 1A, please:*

A. Revenues: *Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.*

B. Expenditures: *Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.*

Expenditures - Data Processing - \$100,000
 Line Item 30
 Aeronautics Commission Special Fund (324)

C. Appropriations: *Explain the appropriation amounts. Provide detail, when appropriate, for each agency and fund affected. Explain the relationship between the amounts shown for expenditures and appropriations. Indicate whether the appropriation is also included in the executive budget or relates to a continuing appropriation.*

In accordance with Senate Bill 2206.

Name:	Larry Taborsky	Agency:	ND Aeronautics Commission
Phone Number:	701.328.9650	Date Prepared:	03/16/2011

FISCAL NOTE
 Requested by Legislative Council
 03/14/2011

Amendment to: SB 2206

1A. **State fiscal effect:** *Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.*

	2009-2011 Biennium		2011-2013 Biennium		2013-2015 Biennium	
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds
Revenues				\$100,000		\$20,000
Expenditures				\$100,000		\$13,000
Appropriations						

1B. **County, city, and school district fiscal effect:** *Identify the fiscal effect on the appropriate political subdivision.*

2009-2011 Biennium			2011-2013 Biennium			2013-2015 Biennium		
Counties	Cities	School Districts	Counties	Cities	School Districts	Counties	Cities	School Districts

2A. **Bill and fiscal impact summary:** *Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).*

Fiscal Note Summary:

Funding to defray the costs of establishing and maintaining a record of anemometer towers within the state, and providing education for pilots on using this web site.

B. Fiscal impact sections: *Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.*

Costs:

- 1) Information Technology Department (ITD) costs for developing a database of existing and future towers, and displaying this information on a map which can be accessed through the aeronautics web site by pilots during their pre-flight planning.
- 2) ITD recurring costs associated with hosting this information.

3. **State fiscal effect detail:** *For information shown under state fiscal effect in 1A, please:*

A. Revenues: *Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.*

Revenue Type - Registration Fee
 Aeronautics Commission Special Fund (324)
 Amounts not included in Executive Budget at this time
 \$ 100,000 Revenue

B. Expenditures: *Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.*

Expenditures - Data Processing - \$100,000
 Line Item 30
 Aeronautics Commission Special Fund (324)

C. Appropriations: *Explain the appropriation amounts. Provide detail, when appropriate, for each agency and fund affected. Explain the relationship between the amounts shown for expenditures and*

appropriations. Indicate whether the appropriation is also included in the executive budget or relates to a continuing appropriation.

In accordance with Senate Bill 2206.

Name:	Larry Taborsky	Agency:	ND Aeronautics Commission
Phone Number:	701.328.9650	Date Prepared:	03/16/2011

Date: 2-11-11
Roll Call Vote # 1

2011 SENATE STANDING COMMITTEE ROLL CALL VOTES
BILL/RESOLUTION NO. 2206

Senate Natural Resources Committee

Legislative Council Amendment Number _____

Action Taken: Do Pass Do Not Pass Amended Adopt Amendment
 Rerefer to Appropriations Reconsider

Motion Made By Hogue Seconded By Schneider

Carried by voice vote

Senators	Yes	No	Senators	Yes	No
Chairman Lyson			Senator Schneider		
Vice-Chair Hogue			Senator Triplett		
Senator Burckhard					
Senator Freborg					
Senator Uglem					

Total (Yes) _____ No _____

Absent _____

Floor Assignment _____

If the vote is on an amendment, briefly indicate intent:

*add lines 12-18 on page 2
of the proposed amendment
that were submitted by Mr. Olson.*

February 10, 2011

#)

PROPOSED AMENDMENTS TO SENATE BILL NO. 2206

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to create and enact a new section to chapter 2-05 of the North Dakota Century Code, relating to rules regarding anemometer towers; and to declare an emergency.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA;

SECTION 1. A new section to chapter 2-05 of the North Dakota Century Code is created and enacted as follows:

Anemometer tower rules.

The aeronautics commission shall adopt rules to become effective by May 1, 2012, which require anemometer towers to be marked to be visible to aircraft and that the location of these towers be reported to the commission in the manner determined by the commission.

SECTION 2. EMERGENCY. This Act is declared to be an emergency measure."

Renumber accordingly

Date: 2-11-11
Roll Call Vote # 2

2011 SENATE STANDING COMMITTEE ROLL CALL VOTES
BILL/RESOLUTION NO. 2206

Senate Natural Resources Committee

Legislative Council Amendment Number 11.0037.02003

Action Taken: Do Pass Do Not Pass Amended Adopt Amendment
 Rerefer to Appropriations Reconsider

Motion Made By Hogue Seconded By Uglen

carried by voice vote

Senators	Yes	No	Senators	Yes	No
Chairman Lyson			Senator Schneider		
Vice-Chair Hogue			Senator Triplett		
Senator Burckhard					
Senator Freborg					
Senator Uglen					

Total (Yes) _____ No _____

Absent _____

Floor Assignment _____

If the vote is on an amendment, briefly indicate intent:

Date: 2-11-11
Roll Call Vote # 3

2011 SENATE STANDING COMMITTEE ROLL CALL VOTES
BILL/RESOLUTION NO. 2206

Senate Natural Resources Committee

Legislative Council Amendment Number _____

Action Taken: Do Pass Do Not Pass Amended ^{as} Adopt Amendment
 Rerefer to Appropriations Reconsider

Motion Made By Uglem Seconded By Schneider

Senators	Yes	No	Senators	Yes	No
Chairman Lyson	✓		Senator Schneider	✓	
Vice-Chair Hogue	✓		Senator Triplett		
Senator Burckhard	✓				
Senator Freborg	✓				
Senator Uglem	✓				

Total (Yes) 6 No 0

Absent 1

Floor Assignment Senator Hogue

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

SB 2206: Natural Resources Committee (Sen. Lyson, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (6 YEAS, 0 NAYS, 1 ABSENT AND NOT VOTING). SB 2206 was placed on the Sixth order on the calendar.

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to create and enact two new sections to chapter 2-05 of the North Dakota Century Code, relating to rules regarding anemometer towers and to an anemometer database; and to declare an emergency.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA;

SECTION 1. A new section to chapter 2-05 of the North Dakota Century Code is created and enacted as follows:

Anemometer tower rules.

The aeronautics commission shall adopt rules to become effective by May 1, 2012, which require anemometer towers to be marked to be visible to aircraft and require the location of the towers be reported to the commission in the manner determined by the commission.

SECTION 2. A new section to chapter 2-05 of the North Dakota Century Code is created and enacted as follows:

Anemometer database.

By January 1, 2012, the aeronautics commission shall establish and maintain a database to identify the locations of all existing anemometer towers. Within one hundred eighty days after the effective date of this Act, each person with an anemometer tower erected in the state shall provide the commission with the global-positioning coordinates of the center of each anemometer tower. Each person intending to erect an anemometer tower shall provide to the commission the global-positioning coordinates of the center of the tower at least fifteen days before the erection of the tower.

SECTION 3. EMERGENCY. This Act is declared to be an emergency measure."

Renumber accordingly

2011 HOUSE INDUSTRY, BUSINESS AND LABOR

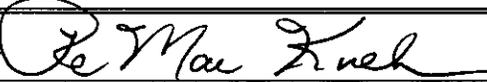
SB 2206

2011 HOUSE STANDING COMMITTEE MINUTES

House Industry, Business and Labor Committee
Peace Garden Room, State Capitol

SB 2206
March 15, 2011
Job #15451

Conference Committee

Committee Clerk Signature 

Explanation or reason for introduction of bill/resolution:

Minutes:

Chairman Keiser: Opens the hearing on 2206.

Senator Miller, Co-Sponsor: Introduces SB 2206. This bill would put a requirement on anemometer towers that they be painted and marked properly. Currently these towers fall short of the 200 foot requirement that is in the FAA rules. These are usually gray galvanized structures with guy wires which often look the same color as the sky. An agricultural aerial spray plane flies close to the ground and these towers are difficult to see. These towers can be erected in a short amount of time. These towers are used to measure wind speed when developing a wind farm. I've been working with the agriculture aviation people and the ND Aeronautics Commission and other entities that deal with flying to find a happy medium to this issue. Wind companies are concerned that it is going to cost them money to take down the towers and put them up again.

One solution, in the amendment and in the current bill, is to use a GPS map and identify where these towers are located. This would allow pilots to access that map easily. I handed out the original bill so you know where we started along with amendments. (See attached #1)

The challenge is when you put something on a tower it creates turbulence. They fear it will interfere with their readings along with the cost.

Representative Boe: This amendment that you handed out, are you offering this amendment?

Senator Miller: The committee can do with them what they will. I want it to be fair to everybody. These towers are hazardous. I think it's important to pass the bill and do something.

Representative Nathe: With your amendments dated February 16, it looks like it brings the bill back to its original form.

Senator Miller: It is different than the original form. The amendments take out several components of the original bill. The original bill required that there be a light on the tower.

It required that there be a definitive marking between where the guy wire attaches to the ground. Also, that there be a contrasting appearance between the ground and the surrounding vegetation. There is no requirement that there be the GPS locations given. The most important thing is the GPS coordinates and have them identified on a website.

Larry Taborsky-Director of North Dakota Aeronautics Commission:
(See attachment #2).

A crop sprayer is a busy person. They are down at the crop level sometimes to the point where the wheels are rolling in the crops as they are spraying. They are required to pull up at the end of the field but not until they get to the end of the field, put out flaps, reduce power, get into a turn, start sizing up the other direction, come down again, adding power back on, pulling flaps back up, reengaging the spray pattern, etc. They are focused on the row not necessarily on things going on around them.

The pictures shown are courtesy of National EMS Pilots Association. They are taken at 1/8 of a mile which doesn't give a person a lot of time to see what is ahead. There are 100 foot heights and 500 foot heights.

The alternating red and white stripes give the good distinguished characteristic across different colored fields and different colored skies. The marker balls are so different that it gives the pilot something to see on the guy wires. The light at the top is about the only thing that works for night time. Reflective markers for the guy wires at the bottom ground contacts are a way of distinguishing them from everything else on the ground.

A wind turbine costs about \$3.5 million. ND Aeronautics Commission supports this Senate Bill 2206. We would need some funding to administer the programs. Our legal counsel has attached an amendment to the current bill recommending the fees be put into the aviation special fund to help support safety programs and increase awareness.

Representative Boe: Senator Miller gave us an amendment. Are you in favor of that amendment?

Larry Taborsky: That is very similar to FAA's recommendation. If the Aeronautics Commission were told to do it, we'd be using a lot of those same guidelines. I'll leave it up to you to decide what is the best for North Dakota.

Representative Boe: You would be okay with these amendments?

Larry Taborsky: I would have to defer that to the commissioners.

Representative Nathe: In the bill under Section 2, we talk about the GPS coordinates for the towers and registering 15 days before they are erected. Could you get a list of current towers and add that?

Larry Taborsky: We could do it but it would be based on who put them up and their participation in that kind of program. They don't like to give out that information unless there is some reason to do so.

Representative Nathe: In regard to the other amendment with registration fees, how much would that be?

Larry Taborsky: Original estimates I get from IT people are \$75,000 to set up a program where a company could go online and register the site. In addition \$520 a month is the maintenance cost. I don't see any estimates for processing the fees.

Chairman Keiser: The amendments introduced seem to take away the need for the aeronautics commission to adopt rules as indicated in the bill on page 1, line 8. If we were to adopt the amendments, these would be the rules?

Larry Taborsky: I believe so. The bottom line is to make these towers visible to pilots flying low.

Chairman Keiser: How many accidents have we had in North Dakota with these towers?

Larry Taborsky: None so far.

Chairman Keiser: How many towers do we have in the state?

Larry Taborsky: I've heard estimates from 200 to 1,000.

Chairman Keiser: Do sprayers go in on a job without talking to the farmer? Would a farmer indicate that there are towers?

Larry Taborsky: I would defer to them. Some of the concern is that it is on the borders of those farms.

Chairman Keiser: Anyone else here to testify in support of SB 2206?

Brian Rau~Farm and operate a commercial aerial application business near Medina:
(See attached testimony #3).

Representative Boe: If I hired you to spray my field, what kind of questions would you ask me?

Brian Rau: Typical questions are about crops and about what is around the field for crops. We do ask for hazard information and often times it's not forthcoming because it's vague. We do try to survey the fields before we enter the lower levels. However these objects are very difficult to see.

Representative Gruchalla: What would be the difference for what they have to do if they are over 200 feet according to FAA rules?

Brian Rau: The FAA comes out and does a hazard evaluation on the structures over 200 feet tall. They will tell the company the specifications they have to meet to get a "no hazard determination." Once the company gets a "no hazard determination", the markings required are the orange and white scheme and a light is typically required.

Representative Amerman: What would happen if we put in code anything in North Dakota at 175 feet has to adhere to federal regulations?

Brian Rau: I'm not certain about the legal ramifications on language like that. I think then the towers would go up at 173 feet. I believe if you got down to 50 feet, which is the wording in this bill, they wouldn't get useful data.

Chairman Keiser: That is the wording in the amendment?

Brian Rau: The wording in the bill as the first engrossment has 50 feet in it. I believe?

Chairman Keiser: The amendment, I know, does have it.

Representative Boe: Historically we don't like rules. If we know what the rule is, we like to put it in the law. If so, would you like the rules to resemble this amendment?

Brian Rau: The rules in amendment-- the only part we have issue with is a statement that says "marker balls or other adequate." We feel that "other adequate" needs to be defined.

Representative Frantsvog: Do you know how tall a wind tower is?

Brian Rau: The upper tip of the rotating blade gets up to 400 feet.

Representative Frantsvog: How far is it from the tip down to where the lights are at?

Brian Rau: I think it is around 200 some feet.

Chairman Keiser: Anyone else here to testify in support of SB 2206?

Matt Hovdenes~Aerial Applicator in Grandin, North Dakota:
(See attached testimony #4).

Chairman Keiser: Have you been able to assess what the cost would be for each tower to mark it as proposed in the amendment?

Matt Hovdenes: We have done significant research in this over the years. The numbers depend on who you talk to. The way the markings were in the original bill would cost an estimated \$7,000 to \$10,000 per tower.

Jeff Faught, President of the International Association of Natural Resource Pilots (IANRP) and a pilot for the North Dakota Game and Fish Department:
(See attached #5)

Representative Amerman: How far out does the highest guy wire go to the anchor?

Jeff Faught: I can't tell you mostly because I don't see them.

Bob Simmers, Co-owner of Bismarck AeroCenter: Last summer I was working in the southwest part of the state spraying a field about a mile long. The typical approach to any field is you circle it and take inventory of everything around the field—power lines, towers, fences, rock piles, etc. You form your own flight plan. It was a rather large field requiring more than one load. The last load of the night I sprayed it out. I got up the next morning fogged in. About 10 o'clock the fog lifted. I went back to the field which I had sprayed the night before. I dropped into the field and out of the corner of my eye I see something. Overnight this MET tower had popped up.

Any legislation that will improve the visibility and inform us of the whereabouts of these structures is highly recommended.

David Anderson, Base Aviation Manager for Angel Air Care, Helicopter Air Ambulance, Bismarck and Linton:

We are in support of SB 2206. Flying EMS is a stressful job. Accidents do occur. The visibility of the towers during the day is extremely slim. I've been flying since 1986. I just returned from Iraq this past August flying Black Hawks Medevac there. It is safer flying here but it is dangerous anytime we are making an approach into a scene call. We educate first responders on the proper methods of setting up a landing zone. They may not even be aware of a brand new tower that is set up.

We aren't always able to watch our GPS. We have a dual GPS in our aircraft which has hazards on it. We could add hazards manually but we can't always watch the moving map in front of us.

We are in support of SB 2206.

Chairman Keiser: Anyone else here to testify in support of SB 2206?

Alexis Brinkman~Administrator of the North Dakota Ag Coalition: (See attached testimony #6)

Chairman Keiser: Anyone else here to testify in support to SB 2206, in opposition?

Representative Brandenburg, District 28: I am in opposition to this bill. About 15 years ago when they were looking at North Dakota for wind energy, this data was critical. This sector is 1500 Megawatts and over \$2 billion investment to the state. A lot of remote areas don't have access to power. They are not that big of a tower and are flimsy. If you add balls to the guy wires you will get ice buildup and probably bring them down. Painting them would be reasonable. As the bill is written, I have some concerns about this bill. There is middle ground here that we need to find.

Vice Chairman Kasper: You said you could seek some middle ground. What is that?

Representative Brandenburg: If there were some color on the towers and some objects with ribbons or flags on the guy lines. Putting them under the Aeronautics Commission isn't the right thing to do.

Vice Chairman Kasper: Have you flown at night in a small plane?

Representative Brandenburg: Yes. You can't see color.

Dale Niezwaag~Basin Electric Power Cooperative: (See the attached testimony #7). We are opposed to SB 2206.

Representative Vigesaa: Besides South Dakota, are there any other states that have requirements such as this?

Dale Niezwaag: Not that I am aware of. Most of our work is in the Dakotas and a little in Wyoming.

Representative Vigesaa: We heard in testimony that after the data is gathered that the towers remain in place. What is your company's position?

Dale Niezwaag: We consider at least two years of data critical. Anything past that we feel we are getting redundant data. In some cases after you put in a wind farm, you will leave an anemometer tower within the confines of the wind farm. The reason is to verify the performance of your wind turbines. Those that keep it up longer may be an economic development group that is trying to attract a wind developer.

Representative Clark: As new towers are ordered, do you get to specify the painting standards? Is there a standard for painting these towers?

Dale Niezwaag: Now there is not. Everything below 200 feet is not regulated. There are no requirements to do that at this time. We would paint them before they go up.

Representative Clark: It seems it would be simple to paint them in the shop. The industry should develop a standard that is acceptable to everybody at least for new towers.

Dale Niezwaag: We agree.

Chairman Keiser: Where did Senator Miller's amendment come from?

Dale Niezwaag: He proposed that to us. It is a lot of things we talked about earlier. What is in that amendment we are supportive of it except for two changes:

1. The ability to use an item like this instead of a marker ball. We would say to put a marker on at least seven inches around.
2. Second thing is the fee. It's an open-ended fee. We are okay with paying some dollars but to just have it open ended, we are concerned about paying \$3,000 or \$4,000 per tower.

Chairman Keiser: We don't like giving away authority and rules and we don't like open-ended fees either. What about putting in a provision for deactivation of towers and removal?

Dale Niezwaag: We are looking at a 3 to 4-year time period. I don't have a good answer.

Chairman Keiser: I would say within 30 days after deactivation it should be taken down and the system should be informed that it is removed.

Dale Niezwaag: I think we could work with that.

John Olson~Nextera Energy: We are probably the busiest wind tower development company in North Dakota. We probably have over a 1,000 Megawatts of the 1,500 Megawatts that was mentioned. We have 70 anemometer MET towers in the state. They are all actively measuring wind velocity for one reason or another.

We support giving the safety component to any pilot. This bill is not a bill that we can support as originally introduced in the Senate nor now. We could support the amendments. We do have the same trouble with the marking balls. They compromise the integrity of the tower if they ice up. They also interfere with the accurate readings of the anemometer testing devices on the tower. Painting of the top third or the entire tower is something that we can live with for future towers. We have a problem with retrofitting existing towers.

We don't have a problem decommissioning the towers. We use the towers and then we remove the towers when we are done. To retrofit the 70 towers, our cost estimates are between \$9,000 and \$15,000 per tower. I don't think that includes the light. There is quite a bit of cost involved and it will take a full time crew at least 6 months. We know there is a 3-year implementation date for these requirements under the terms of this bill. We hope the 3 years to do that is the minimum. We hope we can come to a compromise and yet provide for safety.

Chairman Keiser: Anyone else here to testify?
Closes the hearing.

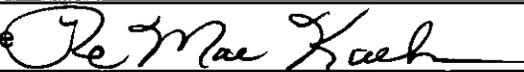
Chairman Keiser: I am going to ask Representative Boe who is carrying this bill to chair a subcommittee consisting of Representative Clark and Representative Frantsvog to meet with the parties and work out a resolution to the concerns expressed this morning.

2011 HOUSE STANDING COMMITTEE MINUTES

House Industry, Business and Labor Committee
Peace Garden Room, State Capitol

SB 2206
March 29, 2011
Job #16125

Conference Committee

Committee Clerk Signature 

Explanation or reason for introduction of bill/resolution:

Committee Work--Relating to rules regarding anemometer towers and to an anemometer database; and to declare an emergency.

Minutes:

Representative Boe: This is a hog house amendment. It gives the definitions in the top. It talks about any tower that is 50 feet in height or more must be painted orange and white. We've located some towers north of Rolla that are owned by Sequoia Energy that had what the Aeronautics Commission was talking about. They have found a way to mark that satisfactorily and not bother the wind data collection and not compromise the integrity of the tower.

The database was switched from the original which said "shall establish" to "may" which makes it permissive. If the Aeronautics Commission wants to provide the database or create it, they can. It tells that within 60 days they are going to provide GPS coordinates on a spreadsheet to the Aeronautics Commission. Ten days before they erect a new one they will notify them. Ten days after they remove one they are going to notify them. The commission may enforce a section as an infraction. An infraction is a \$500 penalty so if you accidentally forgot to follow this you could get a \$500 penalty. If you get two infractions then it can be up to a \$5,000 fine. We put a \$4,500 appropriation into it to help defray the cost of creating the database. We gave them until August 1 of 2014 to mark all existing towers. We put an emergency clause in so this act becomes effective immediately. Our intern was going to get an amendment to further amend this to put a grandfather clause in for any towers that are situated within the boundaries of an existing wind farm.

Vice Chairman Kasper: I see on number 4, page 2 you are putting in a criminal penalty. This committee doesn't like criminal penalties. Are you sure you want to put it in there?

Representative Boe: I'm not married to it.

Chairman Keiser: How many towers are in that position already?

Representative Boe: They estimate about 35 towers that will be in the wind farms.

Chairman Keiser: Do we have a motion to approve the amendment as proposed.

Representative Boe: Moved the amendment.

Representative N Johnson: Seconded the motion.

Representative Ruby: In testimony there was some mention that the marker balls will cause some issues with ice.

Representative Boe: That was an issue. The original language was talking about putting two marker balls on each wire. They were going to be halfway down the wire. The closer you put the ball to the actual tower, it doesn't compromise it as much and the fact that it is just one ball, the engineers figured it would work out alright

Vice Chairman Kasper: Why did you find it desirable to grandfather the existing towers?

Representative Boe: That is what the wind farm developers were asking for. If they wanted the exemption, we could give them the grandfathering knowing full well that when these towers wear out, they will have to be replaced and according to this legislation they will have to be marked at that time.

Chairman Keiser: I would add that the existing towers have to be retrofitted, which means you have to take them down, put on the balls, and then erect them again.

Representative Clark: It was testified that it was quite expensive to take down a tower especially if they wanted to erect it again. Some of these towers within the wind farms are permanent and they didn't want to be saddled with thousands of dollars to take them down, send them to a shop, have them refurbished and put back up. So it was a cost item.

Representative Ruby: Will they at least be marked on GPS.

Representative Boe: The pilots were not married to the idea of GPS coordinates. They will have the data. That is what the bottom part of Section 3, a, b, and, c is collecting that data. The first part of Section 3 is letting the commission create the map. If they want to create a map, there is a historical map and a live map. If it is a live map it is fairly expensive. If it is a historical map, it's reasonably priced. The original fiscal note on this was \$76,000 to create this data base. When IT met with us as a subcommittee on how they justify that kind of money, by the next morning they had it down to \$5,000 to \$7,000. That is why the \$4,500 is in there so it doesn't have to go to appropriations. If they needed extra funds above that, if they could find it in their budget, they are welcome to do that.

Representative Kreun: The grandparent clause just includes the towers within an existing wind farm?

Representative Boe: Yes.

Representative N Johnson: The commission to enforce this as an infraction, where does the fine go?

Representative Boe: I'm not sure.

Voice Vote taken on amendment. Motion carries. Amendment is on the bill.

Representative Boe: Moved Do Pass as amended.

Representative Frantsvog: Seconded it.

A Roll Call vote was taken. **Yes: 14, No: 0, Absent: 0,**

DO PASS as amended carries.

Representative Boe will carry the bill.

PROPOSED AMENDMENTS TO ENGROSSED SENATE BILL NO. 2206

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to create and enact a new section to chapter 2-05 of the North Dakota Century Code, relating to anemometer towers; to provide a penalty; to provide an appropriation; to provide for application; and to declare an emergency.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. A new section to chapter 2-05 of the North Dakota Century Code is created and enacted as follows:

Anemometer towers - Definitions - Penalty.

1. As used in this section, unless the context otherwise requires:
 - a. "Anemometer" means an instrument for measuring and recording the speed of wind.
 - b. "Anemometer tower" means a structure, including all guy wires and accessory facilities, on which an anemometer is mounted for the purposes of documenting wind resources for the operation of a wind turbine generator.
 - c. "Commission" means the North Dakota aeronautics commission.
2. An anemometer tower that is fifty feet [15.24 meters] in height above the ground or higher, is located outside the zoning jurisdiction of a city, and the appearance of which is not otherwise regulated by state or federal law must be marked, painted, flagged, or otherwise constructed to be recognizable in clear air during daylight hours and:
 - a. Must be painted in equal, alternating bands of orange and white, beginning with orange at the top of the tower and ending with orange at the bottom of the tower;
 - b. One or more seven-foot [2.13-meter] safety sleeves must be placed at each anchor point and must extend from the anchor point along each guy wire attached to the anchor point; and
 - c. At least one marker ball must be attached to each guy wire in the highest set of guy wires which does not affect the stability of the tower and the measurement of wind speed.
3. The commission may establish and maintain a database that contains locations of all existing anemometer towers by January 1, 2012. The commission may contract with a governmental entity or a private entity to create and maintain the database.

- a. Within sixty days after the effective date of this Act, an owner of any anemometer tower erected in the state shall provide the commission with global positioning system coordinates of the center of the anemometer tower.
 - b. At least ten days before the erection of an anemometer tower, an owner of the tower shall provide coordinates to the commission.
 - c. Within ten days after the removal of an anemometer tower, an owner of the tower shall notify the commission.
4. The commission may enforce this section. A violation of this section is an infraction.

SECTION 2. APPROPRIATION. There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$4,500, or so much of the sum as may be necessary, to the aeronautics commission for the purpose of establishing a database for anemometer towers, for the biennium beginning July 1, 2011, and ending June 30, 2013.

SECTION 3. APPLICATION. Any anemometer tower that was erected before August 1, 2011, must be marked as required in this section before August 1, 2014. Any anemometer tower that is erected after July 31, 2011, must be marked as required in this section at the time the tower is erected.

SECTION 4. EMERGENCY. This Act is declared to be an emergency measure."

Renumber accordingly

Date: March 29, 2011

Roll Call Vote # 1

2011 HOUSE STANDING COMMITTEE ROLL CALL VOTES

BILL/RESOLUTION NO. 2206

House House Industry, Business and Labor Committee

Check here for Conference Committee

Legislative Council Amendment Number 11-0037.03003

Action Taken: Do Pass Do Not Pass Amended Adopt Amendment

Motion Made By Rep. Roe Seconded By Rep. Johnson

Representatives	Yes	No	Representatives	Yes	No
Chairman Keiser			Representative Amerman		
Vice Chairman Kasper			Representative Boe		
Representative Clark			Representative Gruchalla		
Representative Frantsvog			Representative M Nelson		
Representative N Johnson					
Representative Kreun					
Representative Nathe					
Representative Ruby					
Representative Sukut					
Representative Vigesaa					

voice vote - motion carried

Total Yes _____ No _____

Absent _____

Floor Assignment _____

If the vote is on an amendment, briefly indicate intent:

VK
3/29/11
102

PROPOSED AMENDMENTS TO ENGROSSED SENATE BILL NO. 2206

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to create and enact a new section to chapter 2-05 of the North Dakota Century Code, relating to anemometer towers; to provide a penalty; to provide an appropriation; to provide for application; and to declare an emergency.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. A new section to chapter 2-05 of the North Dakota Century Code is created and enacted as follows:

Anemometer towers - Definitions - Penalty.

1. As used in this section, unless the context otherwise requires:
 - a. "Anemometer" means an instrument for measuring and recording the speed of wind.
 - b. "Anemometer tower" means a structure, including all guy wires and accessory facilities, on which an anemometer is mounted for the purposes of documenting wind resources for the operation of a wind turbine generator.
 - c. "Commission" means the North Dakota aeronautics commission.
2. An anemometer tower that is fifty feet [15.24 meters] in height above the ground or higher, is located outside the zoning jurisdiction of a city, and the appearance of which is not otherwise regulated by state or federal law must be marked, painted, flagged, or otherwise constructed to be recognizable in clear air during daylight hours and:
 - a. Must be painted in equal, alternating bands of orange and white, beginning with orange at the top of the tower and ending with orange at the bottom of the tower;
 - b. One or more seven-foot [2.13-meter] safety sleeves must be placed at each anchor point and must extend from the anchor point along each guy wire attached to the anchor point; and
 - c. At least one marker ball must be attached to each guy wire in the highest set of guy wires which does not affect the stability of the tower and the measurement of wind speed.
3. The commission may establish and maintain a database that contains locations of all existing anemometer towers by January 1, 2012. The commission may contract with a governmental entity or a private entity to create and maintain the database.

202

- a. Within sixty days after the effective date of this Act, an owner of any anemometer tower erected in the state shall provide the commission with global positioning system coordinates of the center of the anemometer tower.
 - b. At least ten days before the erection of an anemometer tower, an owner of the tower shall provide coordinates to the commission.
 - c. Within ten days after the removal of an anemometer tower, an owner of the tower shall notify the commission.
4. The commission may enforce this section. A violation of this section is an infraction.

SECTION 2. APPROPRIATION. There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$4,500, or so much of the sum as may be necessary, to the aeronautics commission for the purpose of establishing a database for anemometer towers, for the biennium beginning July 1, 2011, and ending June 30, 2013.

SECTION 3. APPLICATION. Any anemometer tower that was erected before August 1, 2011, must be marked as required in this Act before August 1, 2014. Any anemometer tower that is erected after July 31, 2011, must be marked as required in this Act at the time the tower is erected. An anemometer tower that has been erected in an existing wind energy generating facility on the effective date of this Act is exempt from the provisions of this Act.

SECTION 4. EMERGENCY. This Act is declared to be an emergency measure."

Renumber accordingly

Date: March 29, 2011

Roll Call Vote # 2

2011 HOUSE STANDING COMMITTEE ROLL CALL VOTES

BILL/RESOLUTION NO. 2206

House House Industry, Business and Labor Committee

Check here for Conference Committee

Legislative Council Amendment Number _____

Action Taken: Do Pass Do Not Pass Amended Adopt Amendment

Motion Made By Rep. Boe Seconded By Rep. Frantsvog

Representatives	Yes	No	Representatives	Yes	No
Chairman Keiser	✓		Representative Amerman	✓	
Vice Chairman Kasper	✓		Representative Boe	✓	
Representative Clark	✓		Representative Gruchalla	✓	
Representative Frantsvog	✓		Representative M Nelson	✓	
Representative N Johnson	✓				
Representative Kreun	✓				
Representative Nathe	✓				
Representative Ruby	✓				
Representative Sukut	✓				
Representative Vigesaa	✓				

Total Yes 14 No 0

Absent 0

Floor Assignment Rep. Boe

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

SB 2206, as engrossed: Industry, Business and Labor Committee (Rep. Keiser, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (14 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed SB 2206 was placed on the Sixth order on the calendar.

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to create and enact a new section to chapter 2-05 of the North Dakota Century Code, relating to anemometer towers; to provide a penalty; to provide an appropriation; to provide for application; and to declare an emergency.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. A new section to chapter 2-05 of the North Dakota Century Code is created and enacted as follows:

Anemometer towers - Definitions - Penalty.

1. As used in this section, unless the context otherwise requires:
 - a. "Anemometer" means an instrument for measuring and recording the speed of wind.
 - b. "Anemometer tower" means a structure, including all guy wires and accessory facilities, on which an anemometer is mounted for the purposes of documenting wind resources for the operation of a wind turbine generator.
 - c. "Commission" means the North Dakota aeronautics commission.
2. An anemometer tower that is fifty feet [15.24 meters] in height above the ground or higher, is located outside the zoning jurisdiction of a city, and the appearance of which is not otherwise regulated by state or federal law must be marked, painted, flagged, or otherwise constructed to be recognizable in clear air during daylight hours and:
 - a. Must be painted in equal, alternating bands of orange and white, beginning with orange at the top of the tower and ending with orange at the bottom of the tower;
 - b. One or more seven-foot [2.13-meter] safety sleeves must be placed at each anchor point and must extend from the anchor point along each guy wire attached to the anchor point; and
 - c. At least one marker ball must be attached to each guy wire in the highest set of guy wires which does not affect the stability of the tower and the measurement of wind speed.
3. The commission may establish and maintain a database that contains locations of all existing anemometer towers by January 1, 2012. The commission may contract with a governmental entity or a private entity to create and maintain the database.
 - a. Within sixty days after the effective date of this Act, an owner of any anemometer tower erected in the state shall provide the commission with global positioning system coordinates of the center of the anemometer tower.
 - b. At least ten days before the erection of an anemometer tower, an owner of the tower shall provide coordinates to the commission.

- c. Within ten days after the removal of an anemometer tower, an owner of the tower shall notify the commission.
 4. The commission may enforce this section. A violation of this section is an infraction.

SECTION 2. APPROPRIATION. There is appropriated out of any moneys in the general fund in the state treasury, not otherwise appropriated, the sum of \$4,500, or so much of the sum as may be necessary, to the aeronautics commission for the purpose of establishing a database for anemometer towers, for the biennium beginning July 1, 2011, and ending June 30, 2013.

SECTION 3. APPLICATION. Any anemometer tower that was erected before August 1, 2011, must be marked as required in this Act before August 1, 2014. Any anemometer tower that is erected after July 31, 2011, must be marked as required in this Act at the time the tower is erected. An anemometer tower that has been erected in an existing wind energy generating facility on the effective date of this Act is exempt from the provisions of this Act.

SECTION 4. EMERGENCY. This Act is declared to be an emergency measure."

Renumber accordingly

2011 SENATE NATURAL RESOURCES

CONFERENCE COMMITTEE

SB 2206

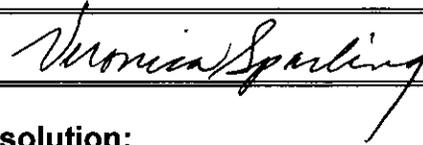
2011 SENATE STANDING COMMITTEE MINUTES

Senate Natural Resources Committee
Fort Lincoln Room, State Capitol

SB 2206
April 7, 2011
Job # 16415

Conference Committee

Committee Clerk Signature



Explanation or reason for introduction of bill/resolution:

Relating to anemometer towers; to provide a penalty; and to provide for application

Minutes:

No Attachments

Chairman Lyson opened the hearing of the Conference Committee on SB 2206. The other members of the committee are **Senator Uglem**, **Senator Schneider**, **Representative Kreun**, **Representative Clark**, and **Representative Boe**.

Chairman Lyson: The limit of time you gave them to take care of the situation was the biggest concern. I thought the rest was okay.

Representative Clark: We are talking about section 3, right?

Chairman Lyson: Do you as the House people have any wiggle room in that?

Representative Boe: Which way did you want to wiggle? Do you think it's too long?

Chairman Lyson: Yes, we think it's too long.

Representative Boe: The original was asking for 2015, but this 2014 number, most of this amendment, we tweaked the amendment and most of this was Senator Miller's that he brought to us in committee. That 2014 number is what he had in there. We had a request to make it 2015. I guess my thought was that at 2014 with the lifespan of these towers we would expect that when they go to retrofit these towers that they would take their newest towers first and work their way towards the back end of it. There are probably 30% of the towers out there that would never get retrofitted. They would just finish their lifespan and be taken out of service. That would be afforded by the 2014 date.

Senator Schneider: This is kind of an unrelated question. Did the House take any testimony on the database and how long it would take to get that up and running? I see that the date is January 1, 2012. Would it be feasible to get that set up before the spring season this year or would that be impossible?

Representative Boe: The data base wasn't a concern to the spray pilots. They testified that they could care less about that. That is more for the emergency personnel. That database is permissive. It gives the aeronautics commission the ability to create the map if they choose to. The data base is going to be provided on a spreadsheet. They didn't think it would be a problem to get the numbers. To set up their mapping system, depending on what kind of mapping system you could arrange, would be anywhere from the low end of \$5,000 to the high end of \$76,000.

Senator Schneider: Your impression is the pilots themselves are not interested in the database?

Representative Boe: The pilots indicated to us that they were not interested in the database.

Chairman Lyson: If the prime sponsor of the bill came in with these amendments and that is the ones that you approved, I would be okay with it.

Senator Uglem: I do see your concern about August 2014, but we are talking about taking a tower down and rebuilding it. That does take some time and will be some expense.

Senator Schneider: What is the life span of an anemometer tower? Is it possible that a lot of them are going to go down between now and 2014 just as a matter of course?

Dale Niezwaag, Basin Electric Power Cooperative: In a normal course when you are doing research you will get wind research for anywhere from 2-5 years on a site. If you are putting it up to test an area that will be your normal course. It will be up for 2-5 years, then take it down and then move the tower someplace else. There are other applications. If you have a local economic development group that wants to get a wind tower in a certain spot, they will put the wind tower up and just leave it there until such a point as they get a wind farm. But normally in a 2-5 year time frame you will be rotating those towers and moving them to other areas.

Chairman Lyson: This goes into effect right away for any new towers that you are putting up?

Dale Niezwaag: Yes, I believe there is an emergency clause on that, that anything that would be put up this year would have the paint and markings on it.

Senator Schneider: I move that the Senate accede to the House amendments.

Senator Uglem: Second

Roll Call Vote: 6-0-0

Carrier: **Senator Schneider**

2011 SENATE CONFERENCE COMMITTEE ROLL CALL VOTES

Committee: Natural Resources

Bill/Resolution No. SB 2206 as () engrossed
 Date: 4-7-11 with House Amendments

Roll Call Vote #: 1

- Action Taken**
- SENATE accede to House amendments
 - SENATE accede to House amendments and further amend
 - HOUSE recede from House amendments
 - HOUSE recede from House amendments and amend as follows

Senate/House Amendments on SJ/HJ page(s) _____

- Unable to agree, recommends that the committee be discharged and a new committee be appointed

((Re) Engrossed) _____ was placed on the Seventh order of business on the calendar

Motion Made by: J. Schneider Seconded by: J. Uglem

Senators			Yes	No		Representatives			Yes	No
Sen. Lyson	✓		✓			Rep. Kreun	✓		✓	
Senator Uglem	✓		✓			Rep. Clark	✓		✓	
Senator Schneider	✓		✓			Rep. Boe	✓		✓	

Vote Count: Yes 6 No 0 Absent 0

Senate Carrier J. Schneider House Carrier _____

LC Number _____ of amendment

LC Number _____ of engrossment

Emergency clause added or deleted

Statement of purpose of amendment

REPORT OF CONFERENCE COMMITTEE

SB 2206, as engrossed: Your conference committee (Sens. Lyson, Uglem, Schneider and Reps. Kreun, Clark, Boe) recommends that the **SENATE ACCEDE** to the House amendments as printed on SJ pages 1122-1124 and place SB 2206 on the Seventh order.

Engrossed SB 2206 was placed on the Seventh order of business on the calendar.

Curtis Kreun

2011 TESTIMONY

SB 2206

11.0037.02001
Title.

Prepared by the Legislative Council staff for
Senator Miller

February 3, 2011

#1

PROPOSED AMENDMENTS TO SENATE BILL NO. 2206

Page 1, line 1, replace "49-02" with "2-05"

Page 1, line 5, replace "49-02" with "2-05"

Renumber accordingly

#2

11.0037.02002
Title.

Prepared by the Legislative Council staff for
Senator Miller

February 3, 2011

PROPOSED AMENDMENTS TO SENATE BILL NO. 2206

Page 2, line 13, replace "be marked as required in this section" with "comply with subdivision d of subsection 2 in section 1 of this Act and the owner must provide the location of the tower to the aeronautics commission"

Renumber accordingly



Anemometer Towers

SB 2206

January 21, 2011

Larry Taborsky, Director
North Dakota Aeronautics Commission

Hello, my name is Larry Taborsky, and I'm the director of the Aeronautics Commission. Thank you for allowing me to speak this morning, and thank you for your efforts in the legislature.

One day as an aerial applicator...



The Aeronautics Commission Represents the state on aviation matters. While most of my flying is above 200 feet, I spent one morning flying with a sprayer. What I learned: lots going on all the time. Power, flaps, angle of bank, airspeed, alignment on the crop row, altitude, spray on and off. This is a busy office! I'm here today to make sure that everyone lives to work another day.

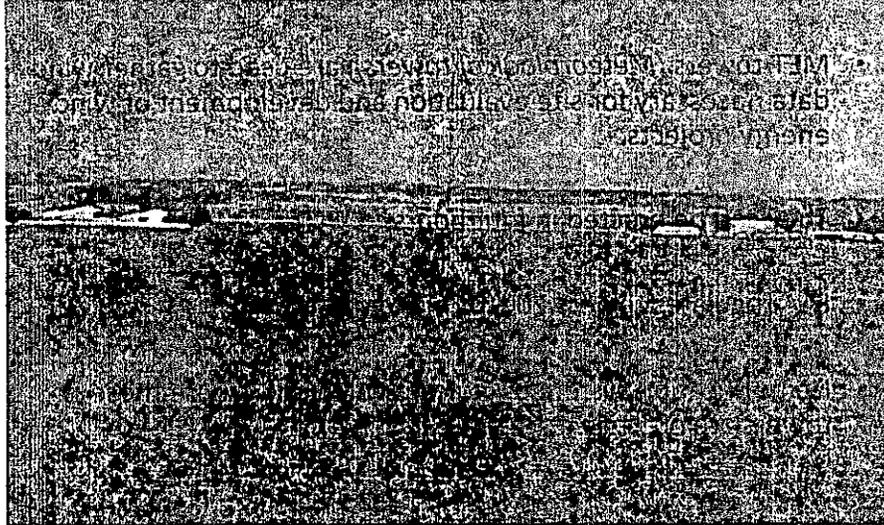
Met Towers

- MET towers (*Meteorological towers*), are used to gather wind data necessary for site evaluation and development of wind energy projects.
- They can be erected in four hours.
- FAA regulates towers 200' or higher.
- No notification system to indicate when and where these towers are erected.

North Dakota is blessed with many resources, and one of them is a plentiful supply of wind. The wind turbine industry uses these met towers to find the best sites for their permanent wind farms.

The FAA restricts towers 200' tall or greater, so 197' towers are common. The only one who needs to know that a tower is going up is the landowner.

Sachs Tower 100' West View



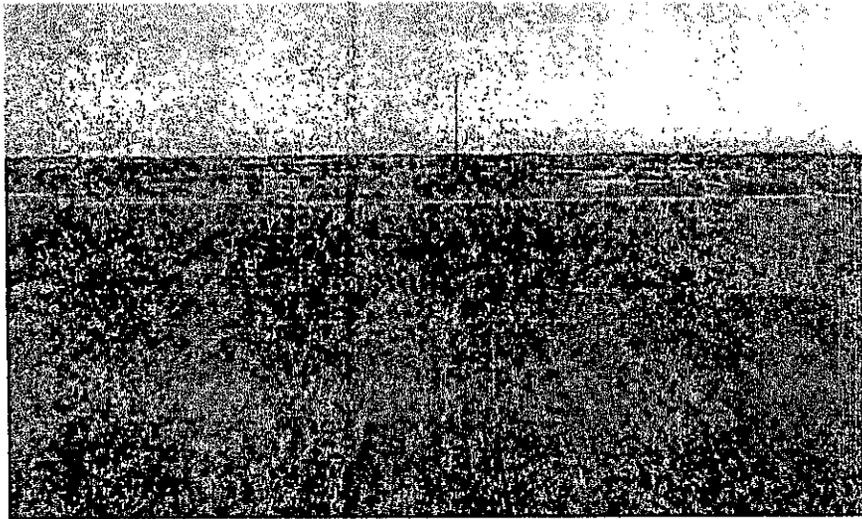
NEMSPA

The first photo is what you'd see on a good day. Note:

- the contrast with the sky, especially with the alternating red and white bands
- the clue that something is there, based on the untilled green patch beneath it
- if you have good eyes, the balls marking the guy wires help to steer clear
- how the furrows could camouflage the gray tower
- imagine a gray sky instead of blue

-This and all the following photos were taken from 1/8 mile, around noon, from 100-500 above the ground, in Minnesota, courtesy of the National EMS Pilots Association.

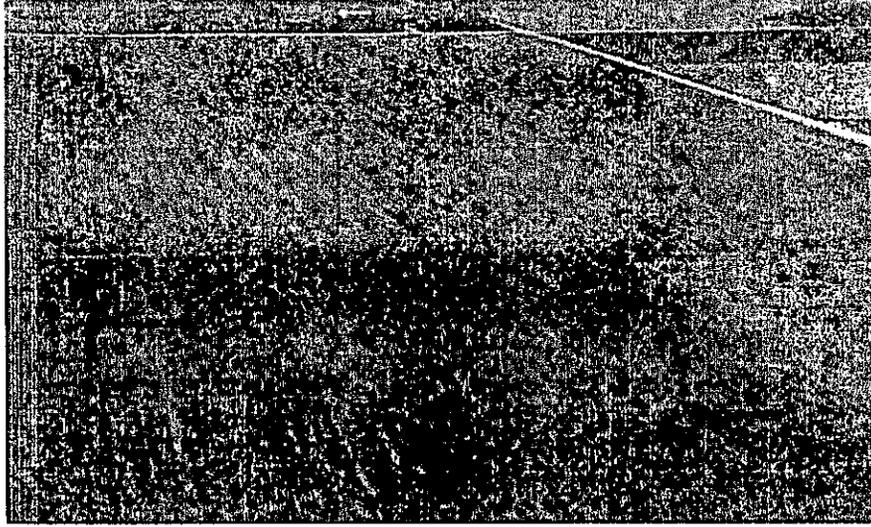
Sachs Tower 100' East View



NEMSPA

Coming from the opposite direction, the ground takes away most of the cues.
But that's where a pilot is focusing his attention.

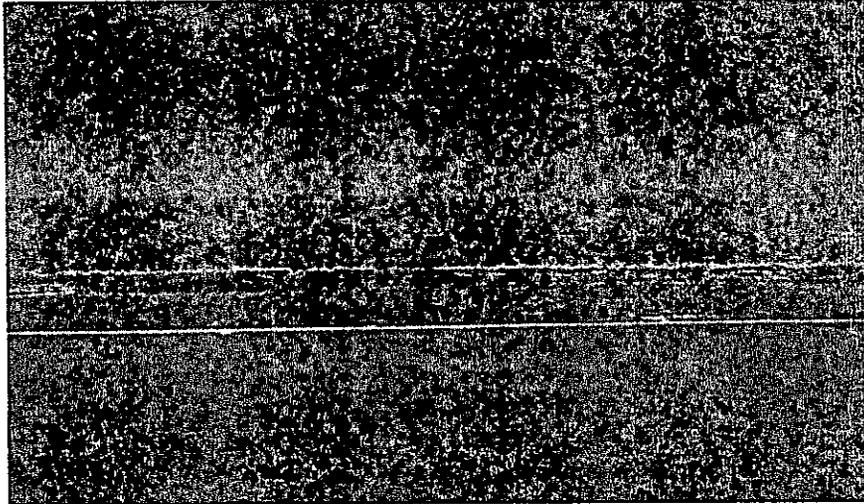
Sachs Tower
500' East View



NEMSPA

At 500', where the prudent pilot is circling and surveying the area, it's even tougher to find.

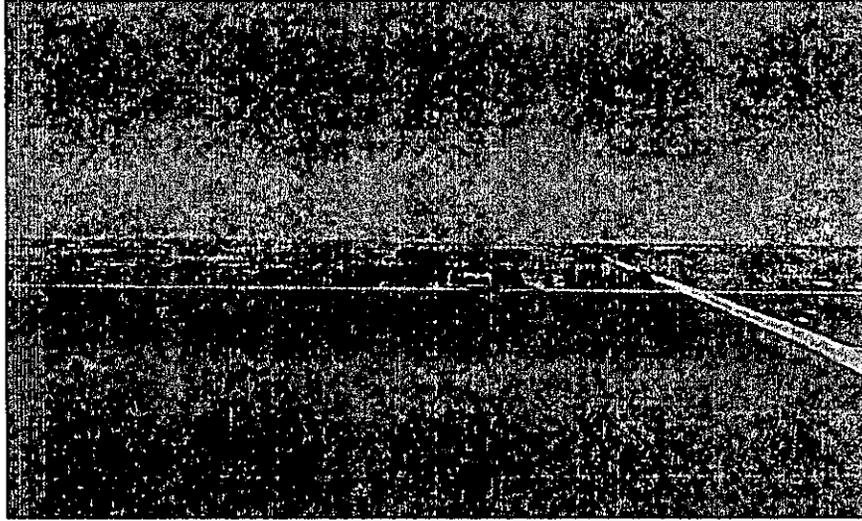
Heins Tower 100' North View



NEMSPA

This tower design didn't include alternating colors, or marker balls, or contrasting anchoring points. The only thing a pilot has going for him is the blue sky.

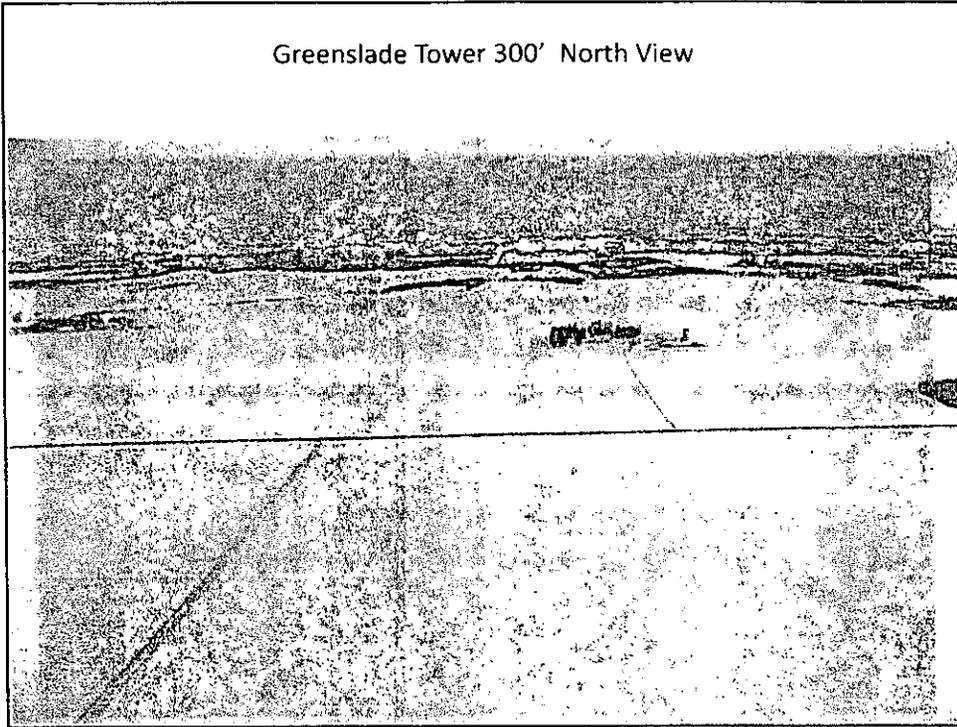
Heins Tower
100' West View



NEMSPA

With a gray sky background, even that fades away.

Greenslade Tower 300' North View



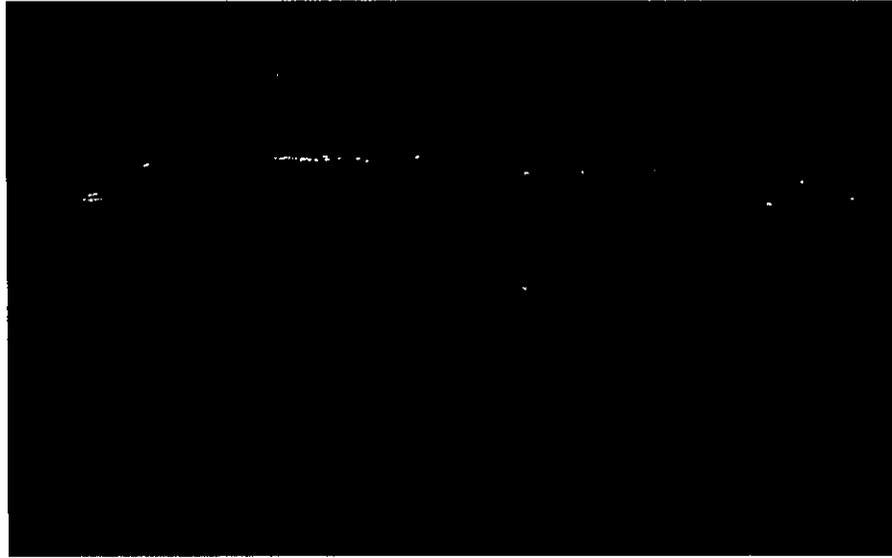
When the snow falls, the sprayers are generally safe for a while. But the air ambulance crews and natural resource crews are as busy as ever. Without the banded markings, there would be no indications of a tower there as you made your approach toward that intersection in the road.

The Game and Fish pilots have said:

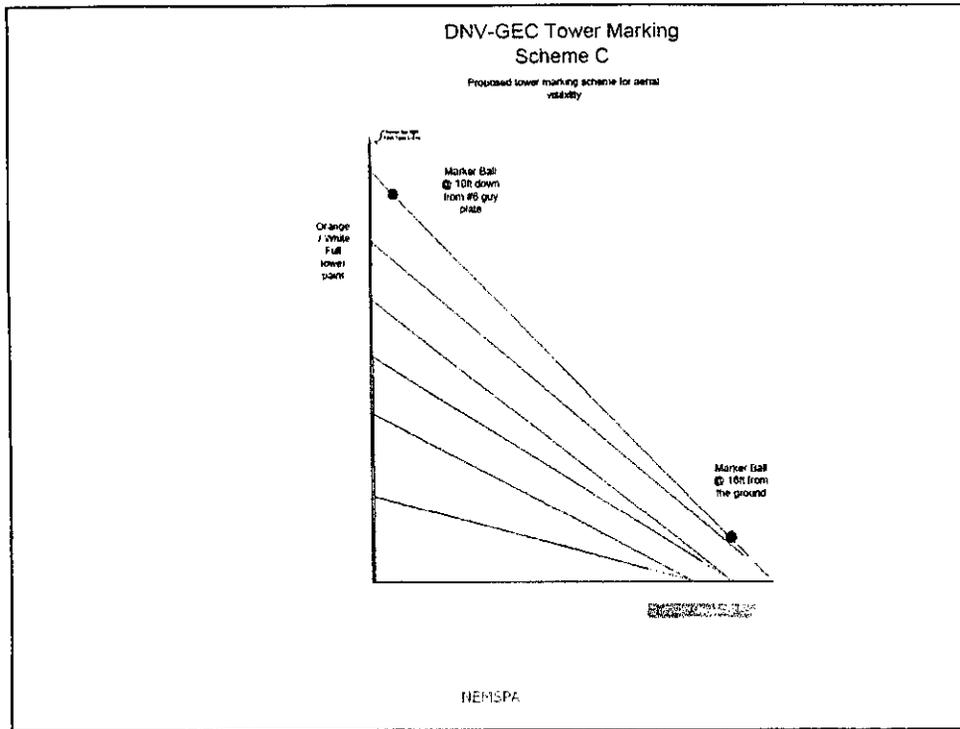
“New GPS terrain software does have towers for warning purposes but many of the new towers below 200' are not on the data base.”

“It is a huge hazard having unlit towers floating around the country side. Jeff is down at that altitude all the time. For myself, it isn't all that uncommon for me to be that low to take photos or look for tracks as I did last Friday and Saturday with the two coyote chasing cases I assisted with/found. Or if we had a search and rescue trying to stay under the clouds. Having those little towers marked will help everyone who has the potential of flying low to locate and avoid an unlit/unmarked tower. They also seem to make a habit of putting those little towers on hills where they can be “taller” but meet the current marking regulations. “

Sachs Tower Light Night OPS

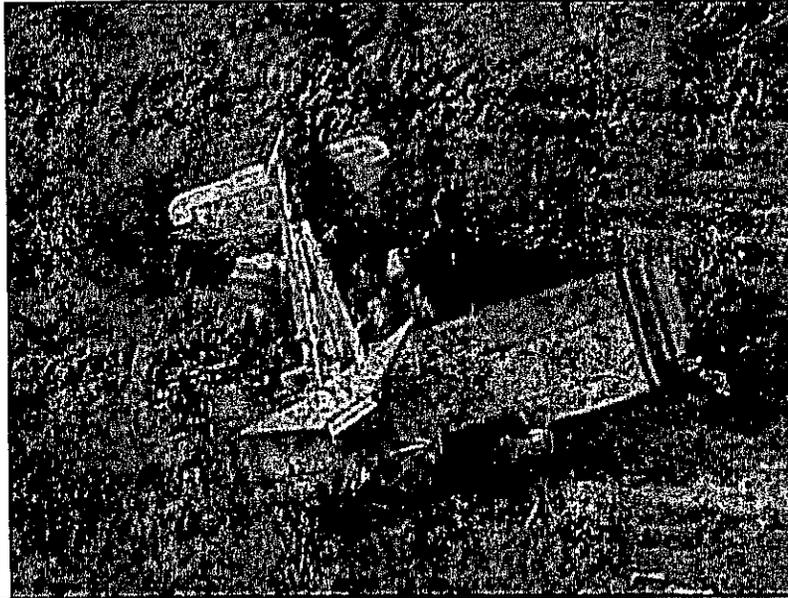


One slide will show the need for lighted towers. Need I say more?



The bill proposes markings similar to this design, lighted at the top, alternating bands throughout, except the marker balls would be equally spaced.

California, January 10, 2011...



A typical wind turbine costs \$3.5 million. The additional expense to mark these towers will save lives for people who fly in North Dakota. The North Dakota Aeronautics Commission supports Senate Bill 2206.

Thank you.

Testimony to the Senate Natural Resources Committee
1 – 21 – 11
In Support of SB 2206

Brian Rau, representing the *North Dakota Agricultural Aviation Association*

Chairman Lyson and members of the Senate Natural Resources Committee:

For the record, my name is Brian Rau and I farm and operate a commercial aerial application business near Medina, North Dakota. I aerially apply crop protection materials, spread cover crop seed for erosion control and assist local fire districts with aerial fire suppression. I am here today on behalf of the *North Dakota Agricultural Aviation Association* (NDAAA). NDAAA represents 103 aerial applicators in the state. NDAAA works to promote aerial application, aviation safety and the safe use of pesticides in the state.

NDAAA supports SB 2206 due to the increase in safety it would bring to Aerial Applicators and others involved in low level aviation operations such as Emergency Medical Services (helivac), aerial fire suppression, animal damage control operations, State Game and Fish aerial operations, and power line and pipeline aerial patrols. SB 2206 addresses the marking and lighting of *Anemometer Towers* commonly called *METs* (meteorological evaluation towers or meteorological testing towers.) These towers are used for collecting data regarding wind speed and direction.

METs are erected in an area in advance of wind energy development, however some remain in place after a wind energy conversion facility is installed. METs are typically 198 feet tall (above ground level) which is just under the 200 foot or above level that federal regulations would require a *hazard determination* which would result in marking and lighting. The *Federal Aviation Administration* (FAA) is currently considering an *advisory circular* to request companies to mark MET's, but is not at this time considering a rule change. The States of South Dakota and Wyoming have enacted legislation requiring the marking of METs. The North Dakota Aeronautics Commission has sent letters to known wind and tower companies requesting that they mark their METs, but we still find most METs are unmarked.

The METs have characteristics that make them particularly hazardous. The combination of slim, grey color, guy wires, no footprint on the ground (see attached pictures) and their ability to go up in a short period of time all make for an accident waiting to happen. Aircraft collisions with towers usually result in fatal injuries. Underscoring the importance and urgency of this issue is a January 10th 2011 collision of an aircraft with a MET in California which resulted in fatal injuries to the pilot.

In my local county, during the zoning hearings for wind turbines and METs, representatives from wind energy stated that they did not want a lighting requirement because METs are often located in remote locations, not close to a conventional power source. The lighting requirement in SB 2206 is for a low intensity light that can be operated by a solar power source. All of the requirements in SB 2206 are offered as options by tower companies. (See attached information.)

Low level flight which is required for many types of operations uses the principal of "See and Avoid" You cannot avoid what you cannot see. This issue is about lives. NDAAA strongly supports the passage of SB 2206. Thank you for the opportunity to address the committee and for the consideration of my comments.

Find The 198-Foot Tower.



Now Imagine Finding It While Flying 130 mph.

Pilots of low-flying aircraft can't avoid what they can't see. Unmarked meteorological testing towers for wind power development are a deadly hazard for agricultural pilots, emergency medical helicopters, aerial firefighters and other low-flying aircraft.

These thin, portable towers can pop up without warning, are unlisted on aerial maps and are

nearly invisible to pilots. Rising just shy of 200 feet, these towers avoid FAA tower marking regulations in most cases.

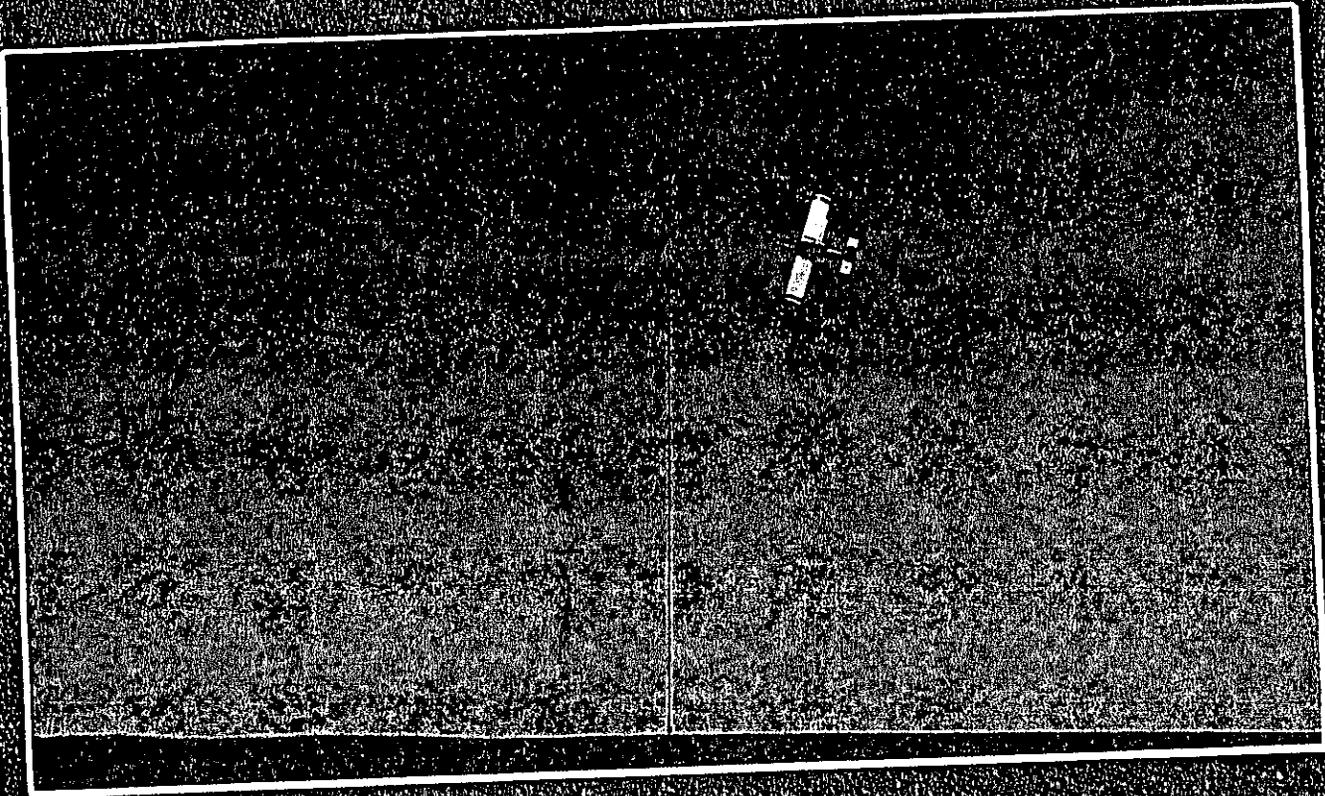
Let's fix this flaw before it becomes a fatal one. Responsible wind power development should include towers that are properly sited, marked and lit.

Let's Be Fair About Sharing The Air
Learn more at www.agaviation.org/towers.htm

A MESSAGE BROUGHT TO YOU BY



Just One Skinny Steel Tower Can Ruin The Whole Day.



One Accident Is One Too Many.

Pilots of low-flying aircraft can't avoid what they can't see. Unmarked meteorological testing towers for wind power development are a deadly hazard for agricultural pilots, emergency medical helicopters, aerial firefighters and other low-flying aircraft.

These thin, portable towers can pop up without warning, are unlisted on aerial maps and are

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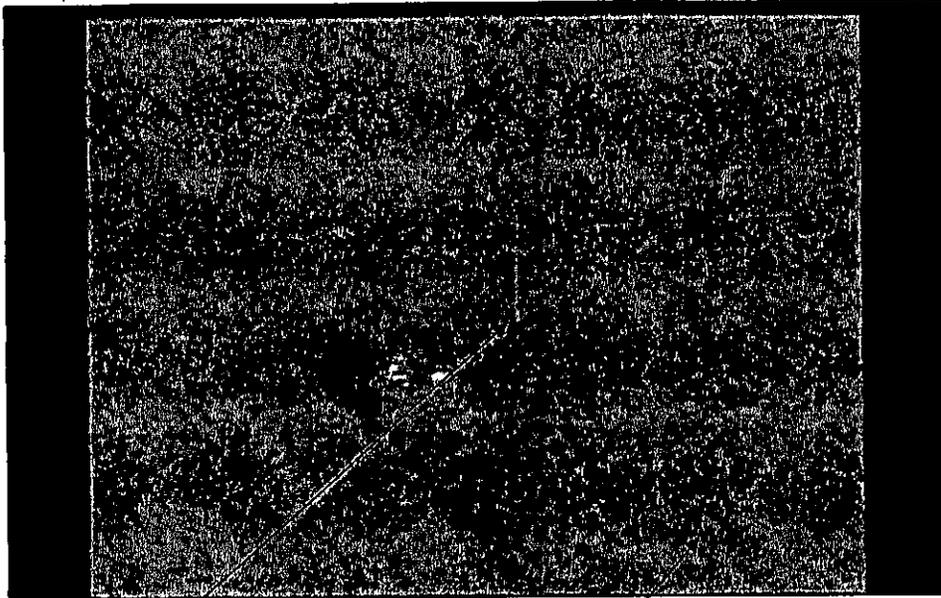
Let's fix this flaw before it becomes a fatal one. Responsible wind power development should include towers that are properly sited, marked and lit.

Let's Be Fair About Sharing The Air
Learn more at www.agaviation.org/towers.htm

A MESSAGE BROUGHT TO YOU BY



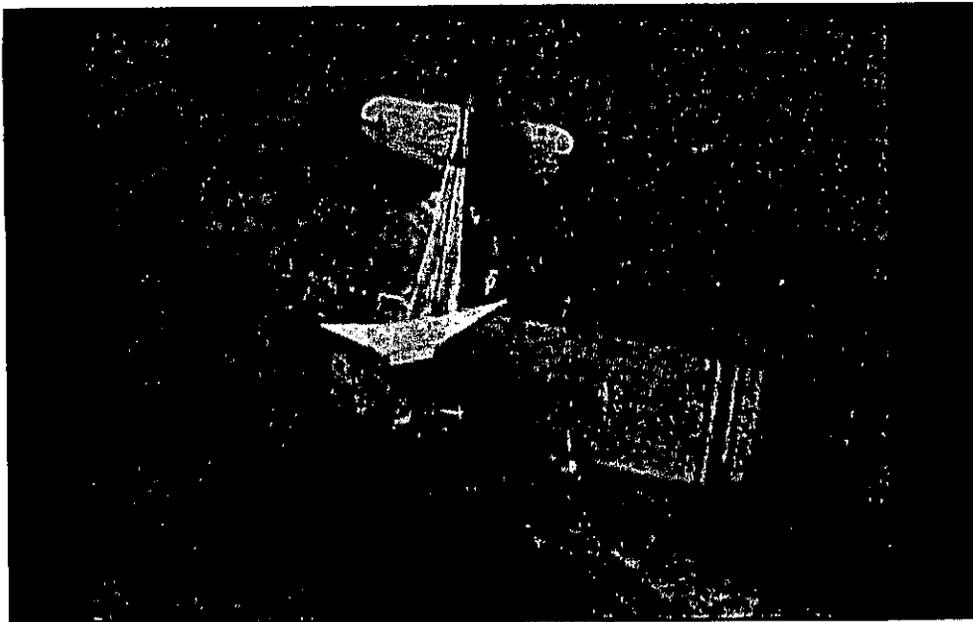
Photos of the January 10th 2011 Aircraft / MET collision, Web Tract Island, Oakley, California



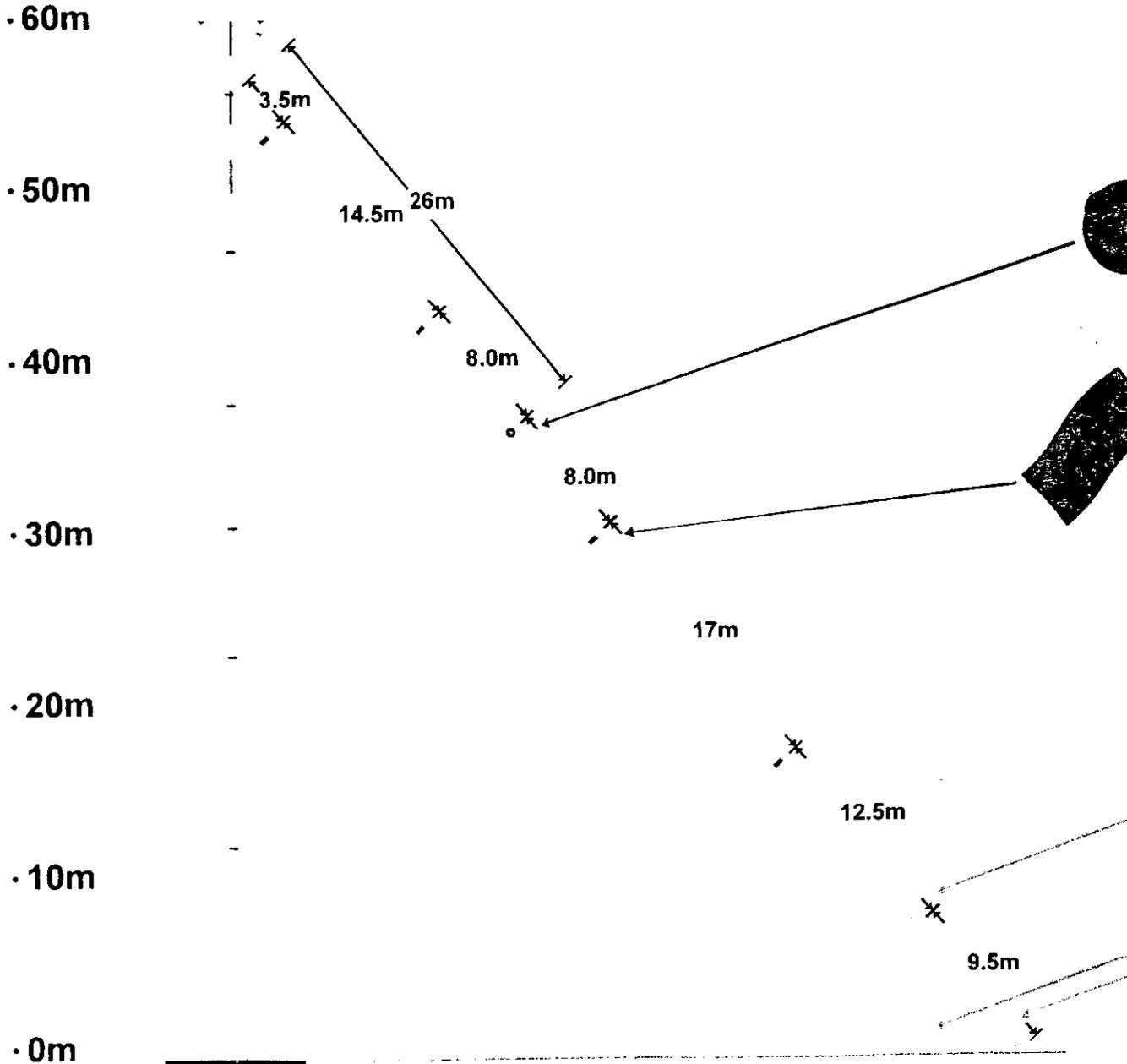
Unmarked MET

Crash site

This MET is not the one involved in the accident. There were apparently 2 METs in close proximity.



EcoEnergy - 60m Met Tower Visibility Marking



High Visibility Items:

Top 11m Painted in 3 Orange and 2 White sections for visibility.
Total of 5 sections are painted.

4 High Visibility Cable Balls installed on the outer guy wires (One on each at 37m height). Diameter 53cm (21")

16 High Visibility Flags installed on the outer guy wires (4 per wire). 0.78m long and 0.4m wide (2x1ft).

16 High Visibility Sleeves, one per each anchor and one installed at 8m height on each of the outer guy wires



Renewable. Responsible. Right now.

Document Designed by:
Kiril Lozanov
Energy Assessment Manager
02/24/2009



Pioneer Windworks LLC

222 North Elm Street
 La Farge, WI 54639
 608-333-7041

Invoice

Date	Invoice #
8/31/2009	299

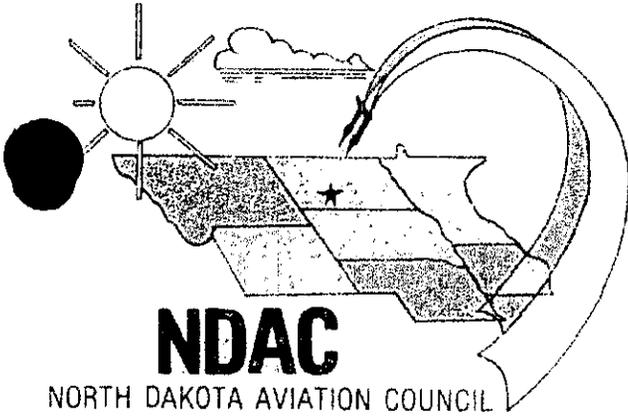
PAID

Bill To
PGO Wind

Project	P.O. No.	Terms
Olmsted CTY met		Net 30

Description	Qty	Rate	Amount
NRG 60m XHD Tall Tower Kit: Includes Logger, (6) #40 Calibrated Anemometers, (2) #200 Vanes, Temp Sensor, Cables and Grounding.		14,568.75	14,568.75T
Digital iPack - CDMA or GSM depending on coverage.		1,332.00	1,332.00T
Met tower visibility package - optimum guy-line marking to deter collisions with machinery.		320.00	320.00T
NRG complete tower painting to FAA specs	1	2,800.00	2,800.00T
NRG High Visibility guy-line ball markers	2	439.38	878.76T
Avlite AV70 - top-of-tower light - includes materials/labor to create mount		495.00	495.00T
NRG Screw-in Anchor - 3 extra needed at winch	3	30.00	90.00T
Equipment Subtotal			20,484.51
Professional Met Tower Installation: Installation includes standard NRG anchor setting in normal soils, sensor mounting per customer specifications, programming of data logger and iPack, tower erection, on-site testing and commissioning, guy wire safety markers, and site commissioning report.		5,750.00	5,750.00T
		Subtotal	
		Sales Tax (0.0%)	
		Total	

#3



January 20, 2011

2011 North Dakota Legislative Assembly
Senate Natural Resources Committee

Honorable Chairman Lyson and Committee Members:

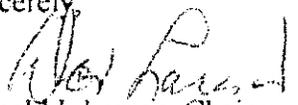
Re: Senate Bill 2206

The North Dakota Aviation Council, which consists of eight aviation related organizations in North Dakota, is on record of supporting SB2206.

The intent of the bill is to make the anemometer towers more visible to those flying aircraft at low altitudes. In our state that includes medical life flights, game and fish department, crop spraying, pipe line patrols and National Guard activities. These towers are erected in a relatively short period of time and are extremely difficult to see, consequently they become a real safety issue. Because these towers are less than 200 feet in height, the Federal Aviation Administration (FAA) does not require they be marked or lighted.

On behalf of the North Dakota Aviation Council, I respectfully request your support of SB2206.

Sincerely,


Donald I. Larson, Chairman
North Dakota Aviation Council



#4
THE INTERNATIONAL ASSOCIATION OF

NATURAL RESOURCE PILOTS



SB 2206

Hello my name is Jeff Faught. I am the President of the International Association of Natural Resource Pilots and am a pilot for the North Dakota Game and Fish Department. Thank you for allowing me speak to you today.

It is common for pilots in the natural resource industry to fly at low altitudes doing game surveys, taking photos, locating animals with transmitters, capturing, providing search and rescue services, performing enforcement missions and other low level maneuvers.

The advent of MET towers has introduced a hazard to this type of flying that needs to be addressed. These towers are hard to see even in good light conditions, but in flat light conditions are at times impossible to see until you are dangerously close. Because of their thin diameter they also blend into the terrain and may at first appear to be a fence. These phenomena happen in all four seasons.

I have seen two of these towers with orange and white paint from the ground up to the top and it made a big difference in seeing it at a distance and distinguishing it from other objects. I support the recommendation to paint these towers from the ground to the top, mark the guy wires and install a solar powered light on top as spelled out in HB 2206.

Thank you,
Jeff Faught
IANRP President
NDGF Pilot
701-220-7248

**North Dakota Senate Bill 2206
Dale Niezwaag - Basin Electric Power Cooperative
Senate Natural Resources Committee
January 21, 2011**

Mr. Chairman and members of the committee, my name is Dale Niezwaag. I represent Basin Electric Power Cooperative and we are opposed to SB 2206 as currently drafted.

Basin Electric has done a significant amount of wind research in North and South Dakota over the past 10-20 years. The main tool for obtaining that data is from the use of Meteorological (MET) towers that contain anemometers. When we conduct wind studies in an area we will install a 198 ft. tower and leave it in place for at least 2 years to measure the wind speeds at a height as close as possible to the hub height of a wind turbine, which is often over 250 feet in height. Typically these towers are less than 200 ft. in height to staying below the nationally recognized level, which triggers a Federal Aviation Administration requirement for lighting on the tower

We understand the concerns of the Aerial Applicators Association but we also believe that developers and other organizations need to be able to conduct wind research and keep the wind industry moving forward in the state.

The main reasons for our opposition to SB 2206 are the costs it will add to the installation and operation of a MET tower which will roughly double the cost of an installed tower. These changes will also increase the chances for tower failure and decrease the reliability of information obtained from the equipment. It should also be noted that many other structures of 50 feet to 200 feet do not have these stringent requirements placed on them. In the end, if this bill passes as written, most small entities will not be able to put up their own MET towers and the larger developers will probable reduce their MET tower plans.

As an example, Basin Electric has 6 MET towers in storage from our ND and SD wind projects that we have built. We planned to install them in different areas of South Dakota to research the wind characteristics. However, last year the South Dakota Legislature passed a law similar to SB 2206. After evaluating the costs to meet the requirements, we decided to not install the MET towers. We were considering locations in North Dakota to gain information for possible future projects, but this legislation would eliminate that option.

SB 2062 calls for painting the towers, adding marking balls, lights, fencing and developing contrasting areas on the ground. Based on discussions with vendors and our installation contractor, we developed a range of costs for lighting, painting, marking, and fencing. The final costs that we came up with to comply with all the requirements in the bill ranged from \$6,500 to over \$24,000 for new towers and \$9,000 to \$26,000 to retrofit existing towers. When you consider that the cost of an installed tower runs from \$26,000 to \$32,000, the costs to meet the proposed new requirements make the cost of installing a tower prohibitive for wind prospecting at many sites. Many economic development groups and landowners contemplating wind measurements on their property will likely be precluded from doing so due to the cost of this proposed bill.

Information received from our tower vendors indicates that adding marker balls to the guy wires makes the tower more susceptible damage or failure due to ice and also has the potential to disturb the wind flow which in turn affects the accuracy of the readings. The manufacturer we use for towers recommends against the installation of marker balls because of the potential for added weight from icing could cause the tower to collapse.

Another concern we have with the proposed bill is the requirement for "each point where a guy wire is anchored to the ground must have a contrasting appearance with any surrounding vegetation". We are unsure how this would be done when the landscape in North Dakota goes from brown to overgrown in green, to covered in white.

Mr. Chairman and members of the committee based on these reasons we are opposed to 2206 as written and would urge a "do not pass" vote on the bill. This concludes my testimony and I will try to answer any questions from the committee.

Comparative Estimated Costs of SB 2206:

Standard Equipment Today:

60M NRG Tower System – standard tower:	\$17,000
Cell Phone Service:	\$1,500
Installation in ND:	\$5,000-\$9,000
Decommissioning in ND:	\$2,500 to \$5,000
Estimated Total:	\$26,000 to \$32,500

Added Costs under SB 2206:

New Installation Under Proposed Legislation:

Painted Tower Option (FAA):	\$2,500
Marker Balls:	\$1,000
Cost to Install Marker Balls	\$500
Fencing & Ground Contrast (\$ vary on site/ground type)	\$500 to \$5,000
Estimated Total	\$4500 to \$9500

Retrofit Existing Towers:

Take down and re-erect tower:	\$3000-\$5000
Retrofit Painting in the field:	\$3,500-\$5,000
Mileage to site & per diem for crew:	\$500-\$1500
Estimated Total	\$7000 to \$11,500

Lighting in Excess of FAA Requirements:

Installation of red light (New or Retrofit)	\$500
Non-FAA rated - Avlite from Australia	\$550
FAA Approved - Flash Technologies (US)	\$4,500
Photovoltaics and Battery System to power light	\$8,500
Monitoring System to Ensure Compliance	\$1,000
Estimated Total	\$2,050 to \$14,500

Estimated Cost Impact of New Legislation

	<u>Range</u>
Added Cost for New Towers:	\$6,500 to \$24,000
Added Cost for Retrofit:	\$9,000 to \$26,000

Note: Wide range of estimated cost is primarily due to uncertainty of availability of lights to meet new non-standard lighting requirement and vague language regarding varying field conditions (particularly uncertain ground contrast requirements)

Senate Bill 2206

Presented by: Illona A. Jeffcoat-Sacco
General Counsel
Public Service Commission

Before: Senate Natural Resources Committee
Honorable Stanley W. Lyson, Chairman

Date: January 21, 2011

TESTIMONY

Mister Chairman and committee members, I am Illona Jeffcoat-Sacco, General Counsel with the Public Service Commission. The Commission opposes Senate Bill 2206.

The Commission recognizes the importance and relevance of the issue addressed in this bill but believes it is inappropriate to put anemometer regulation and enforcement under the Commission's jurisdiction.

N.D.C.C. section 49-01-01(3) defines a public utility as "any association, person, firm, corporation, limited liability company, or agency engaged or employed in any business enumerated in this title." If this bill passes, operators of anemometers will be public utilities, and we do not think that result is intended.

The Commission is concerned that the bill will be difficult to implement. We do not currently have the information or expertise to identify what towers would be jurisdictional under this bill. Further, the Commission does not site, regulate or otherwise oversee the location, construction or maintenance of any of cell, radio, microwave or other communication towers. Any similar regulations for

those types of towers would be implemented by some other local, state or federal agency.

The Commission's involvement in siting towers relates only to electric transmission facilities as defined in law. The Commission also has safety jurisdiction over electric facilities. The Commission implements its safety jurisdiction by adopting by reference the National Electrical Safety Code. There do not appear to be sufficient similarities between the requirements of Senate Bill 2206 and our existing jurisdiction to support giving the regulation of anemometers to the Commission.

Mister Chairman, this concludes our testimony. I will be happy to answer any questions you may have.

Tri-State Aviation Inc.

1251 Pegasus Road
Wahpeton ND 58075
tsa@702com.net
800-642-5777

January 18, 2011

Honorable Chairman Lyson and Natural Resources Committee Members:

Re: Senate Bill 2206

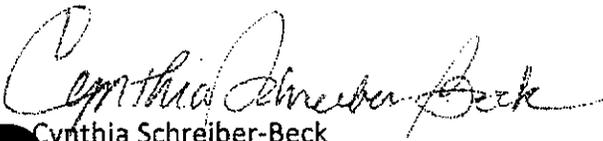
I am asking for your support of Senate Bill 2206. The intent of the bill is to require marking and lighting of anemometer towers so the towers are visible to pilots flying at lower altitudes in airplanes and helicopters. In North Dakota this type of flight includes medical life flights, game and fish department work, pipe line patrol, power line patrol, National Guard activity and crop spraying.

I hope you were able to view the photos taken from a helicopter by a life flight pilot who flies in the Rochester, Minnesota area --- these are worth a thousand words. Because the anemometer towers are not 200 feet in height, the Federal Aviation Administration (FAA) does not require the towers to be marked or lighted. There has been a three-year, nation-wide effort requesting the FAA to require that anemometer towers to be marked and lighted in the name of pilot safety. The FAA recently proposed an advisory circular (regarding the marking and lighting of the towers) which is in the comment period at this time. Because it has taken the FAA over three years to respond, other states have passed legislation requiring anemometer towers to be marked. Now the efforts to have anemometer towers visible has become reactive instead of proactive - last week a fatality occurred following a collision of an agricultural aircraft with an anemometer tower in California. Marking and lighting anemometer towers is about preventing accidents and preserving human life, it is not an attempt to interfere with the development of wind energy.

I have communicated with Brian Kalk from the Public Service Commission regarding the marking of the towers. He has shared the information, including the visual presentation, with Commissioner Clark and Commissioner Cramer.

The North Dakota Aeronautics Commission is on record as supporting the legislation to require anemometer towers to be marked. I sincerely request your support of Senate Bill 2206.

Thank you for your consideration and your service to North Dakota.



Cynthia Schreiber-Beck
North Dakota Aeronautics Commission, Member
North Dakota Agricultural Aviation Association, Executive Director

PROPOSED AMENDMENTS TO ENGROSSED SENATE BILL NO. 2206

Page 1, line 1, replace "two" with "three"

Page 1, after line 20, insert:

"SECTION 3. A new section to chapter 2-05 of the North Dakota Century Code is created and enacted as follows:

Registration fee.

The aeronautics commission shall establish and impose a registration fee for each anemometer tower to be registered with the commission. The fees collected must be deposited in the aeronautics commission special fund."

Renumber accordingly

February 16, 2011

PROPOSED AMENDMENTS TO ENGROSSED SENATE BILL NO. 2206

Page 1, line 1, after "A BILL" replace the remainder of the bill with "for an Act to create and enact a new section to chapter 2-05 of the North Dakota Century Code, relating to anemometer towers; to provide a penalty; to provide for application; and to declare an emergency.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. A new section to chapter 2-05 of the North Dakota Century Code is created and enacted as follows:

Anemometer towers - Definitions - Penalty.

1. As used in this section, unless the context otherwise requires:
 - a. "Anemometer" means an instrument for measuring and recording the speed of wind.
 - b. "Anemometer tower" means a structure, including all guy wires and accessory facilities, on which an anemometer is mounted for the purposes of documenting wind resources for the operation of a wind turbine generator.
 - c. "Commission" means the North Dakota aeronautics commission.
2. An anemometer tower that is fifty feet [15.24 meters] in height above the ground or higher, is located outside the zoning jurisdiction of a city, and the appearance of which is not otherwise regulated by state or federal law must be marked, painted, flagged, or otherwise constructed to be recognizable in clear air during daylight hours and:
 - a. The anemometer tower must be painted in equal, alternating bands of orange and white, beginning with orange at the top of the tower and ending with orange at the bottom of the tower.
 - b. One or more seven-foot [2.13-meter] safety sleeves must be placed at each anchor point and must extend from the anchor point along each guy wire attached to the anchor point; and
 - c. Two marker balls or other adequate marking devices must be attached to and evenly spaced on each of the outside guy wires.
3. The commission shall establish and maintain a database that contains locations of all existing anemometer towers by January 1, 2012. The commission may contract with a governmental entity or a private entity to create and maintain the database. The commission may charge the owner of an anemometer tower a fee based on the number of towers placed in the database to cover the cost to create and maintain the database.

- a. Within sixty days after the effective date of this Act, an owner of any anemometer towers erected in the state shall provide the commission with global positioning system coordinates of the center of the anemometer tower.
 - b. Ten days before the erection of an anemometer tower, an owner of the tower shall provide coordinates to the commission.
4. The commission may enforce this section, and a violation of this section is a class B misdemeanor.

SECTION 2. APPLICATION. Any anemometer tower that was erected before August 1, 2011, must be marked as required in this section before August 1, 2014. Any anemometer tower that is erected after July 31, 2011, must be marked as required in this section at the time it is erected.

SECTION 3. EMERGENCY. This Act is declared to be an emergency measure."

Renumber accordingly

Construction of towers in rural areas throughout the U.S. is a concern to many in the aviation industry. These vertical obstacles are a major safety concern to medical helicopter operations, aerial applicators, aerial fire fighting, predator control, aerial wildlife surveys, military operations and others. These towers are often just under 200 feet tall, falling just outside FAA regulations governing tall structure. The number of cell phone, wind-energy and other towers erected throughout the U.S. in agricultural regions has increased significantly over the past several years and is projected to continue into the future.



Federal Aviation Administration

www.FAASafety.gov

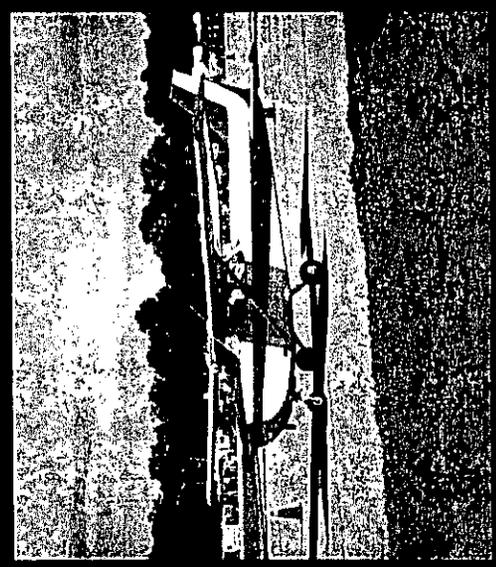
Your Aviation Safety Web Site

FAASTeam

FAA Safety Team

www.FAASafety.gov

TOWERS



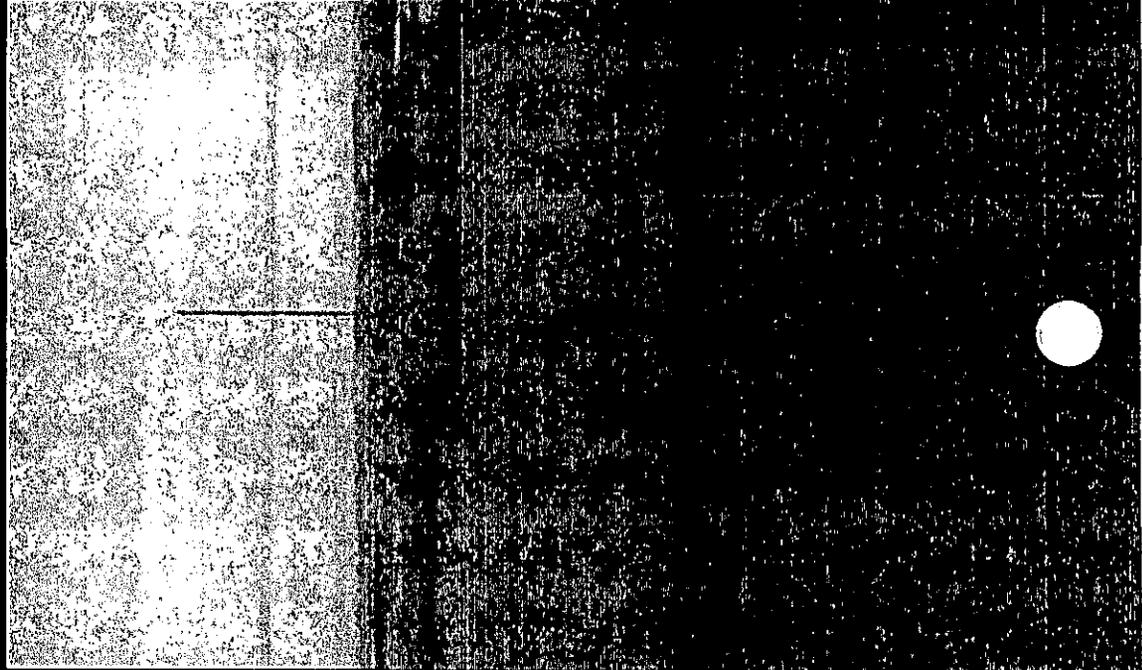
10-1137-100D

Meteorological towers are a safety concern to operations including medical air rescue (HEMES), aerial application, law enforcement, pipeline patrol, and others because they are constructed on or near rural areas, may not be marked with lights or other marking devices and can be erected in hours. Additionally, the lack of color, small size (just under 200 feet) and small footprint can make an uncharted tower very difficult to see. These circumstances, along with the projected growth in the wind energy industry creates a risk to the aviation community that operate at low altitudes. Remember, adhere to 14 CFR 91.119 Minimum Safe Altitudes.

CAN YOU SEE THE TOWERS?

It may be too late...

Many towers are just below 200 feet in height, only a few inches in diameter, unlit, and dull gray in color, making them very difficult to see from the air.



BE AWARE AND FLY SAFE

Towers can be erected in hours!

AG operators returning to a field after a few days or a few hours may find a tower that wasn't there earlier.

Towers may have a small footprint!

The small size may leave little ground disturbance (footprint) to indicate the towers presence. However, at times, the footprint may be easier to spot than the tower itself!

The tower COLOR may be difficult to see!

Many towers are just under 200 feet tall, light gray in color, unlit, and do not have markers to note any support cables. Check the internet to see if your state maintains a tower registry, and check your route as part of the preflight.

FERRY ABOVE AND STAY ALIVE

Aerial application's Professional Aerial Applicator's Support System® (PAASS) safety program slogan reminding pilots to fly above 500 feet except when the operation requires flying at a lower altitude.

recommendations, and comments on the proposal. All comments received during these meetings will be considered prior to any revision or issuance of a notice of proposed rulemaking.

DATES: The informal airspace meetings will be held on Friday, March 18, 2011, from 2:30 p.m.–4 p.m.; Saturday, March 19, 2011, from 8:30 a.m.–11 a.m.; Monday, March 21, 2011, from 7:30 p.m.–9 p.m., and Tuesday, March 22, 2011, from 7:30 p.m.–9 p.m. Comments must be received on or before May 6, 2011.

ADDRESSES: (1) The meeting on Friday, March 18, 2011, will be held at the Metropolitan Airports Commission (MAC), 6040 28th Avenue, South, Minneapolis, MN 55450. (2) The meeting on Saturday, March 19, 2011, will be held at the In Flight Pilot Training, LLC., 10,000 Flying Cloud Drive, Eden Prairie, MN 55347. (3) The meeting on Monday, March 21, 2011, will be held at the Minnesota Army National Guard, Aviation Facility, 206 Airport Road, St. Paul, MN 55107. (4) The meeting on Tuesday, March 22, 2011, will be held at the Metropolitan Airports Commission (MAC), 6040 28th Avenue, South, Minneapolis, MN 55450.

Comments: Send comments on the proposal, in triplicate, to: Anthony D. Roetzel, Manager, Operations Support Group, AJV–C2, Central Service Center, Air Traffic Organization, FAA Southwest Regional Office, 2601 Meacham Boulevard, Fort Worth, TX 76137.

FOR FURTHER INFORMATION CONTACT: To obtain details, including a graphic depiction regarding this proposal, please contact Jim Shadduck, FAA Support Manager, Minneapolis Airport Traffic Control Tower, 6311 34th Avenue, South, Minneapolis, MN 55450; telephone: (612) 713–4065.

SUPPLEMENTARY INFORMATION:

Meeting Procedures:

(a) Doors open 30 minutes prior to the beginning of each meeting. The meetings will be informal in nature and will be conducted by one or more representatives of the FAA Central Service Center. A representative from the FAA will present an informal briefing on the planned modification to the Class B airspace at Minneapolis, MN. Following the briefing, each attendee will be given an opportunity to deliver comments or make a presentation, although a time limit may be imposed. Only comments concerning the plan to modify the Class B airspace area at Minneapolis, MN, will be accepted.

(b) The meetings will be open to all persons on a space-available basis. There will be no admission fee or other charge to attend and participate.

(c) Any person wishing to make a presentation to the FAA panel will be asked to sign in and estimate the amount of time needed for such presentation. This will permit the panel to allocate an appropriate amount of time for each presenter. These meetings will not be adjourned until everyone on the list has had an opportunity to address the panel.

(d) Position papers or other handout material relating to the substance of these meetings will be accepted. Participants wishing to submit handout material should present an original and two copies (3 copies total) to the presiding officer. There should be additional copies of each handout available for other attendees.

(e) These meetings will not be formally recorded. However, a summary of comments made at the meeting will be filed in the docket.

Agenda for the Meetings

- Sign-in.
- Presentation of meeting procedures.
- FAA briefing of the proposed Class B airspace area modifications.
- Solicitation of public comments.
- Closing comments.

Issued in Washington, DC, on December 21, 2010.

Edith V. Parish,
 Manager, Airspace, Regulations and ATC
 Procedures Group.

[FR Doc. 2010–33305 Filed 1–4–11; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 77

[Docket No: FAA 2010–1326]

Marking Meteorological Evaluation Towers

AGENCY: Federal Aviation Administration (FAA), DOT.
ACTION: Proposed revision to Advisory Circular; request for comments.

SUMMARY: The FAA is considering revising its current Advisory Circular on Obstruction Marking and Lighting to include guidance for Meteorological Evaluation Towers (METs). These towers are erected in remote and rural areas, often are less than 200 feet above ground level (AGL), and fall outside of FAA regulations governing tall structures and their impact on navigable

airspace. The proposed marking guidance would enhance the conspicuity of the towers and address the safety related concerns of low level agricultural operations. The FAA seeks comment on the proposed guidance.

DATES: Comments must be received on or before February 4, 2011.

ADDRESSES: You may send comments identified by docket number FAA 2010–1326 using any of the following methods:

- **Federal eRulemaking Portal:** Go to <http://www.regulations.gov> and follow the online instructions for sending your comments electronically.
- **Mail:** Send Comments to Docket Operations, M–30; U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12–140, West Building Ground Floor, Washington, DC 20590–0001.
- **Hand Delivery:** Take comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- **Fax:** (202) 493–2251.

FOR FURTHER INFORMATION CONTACT:

Sheri Edgett-Barron, Obstruction Evaluation Services, Air Traffic Organization, AJV–15, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone: (202) 267–8783; e-mail: sheri.edgett-barron@faa.gov.

SUPPLEMENTARY INFORMATION:

14 CFR Part 77

Title 49 of the United States Code (U.S.C.), section 40103(a)(1), provides that the “United States Government has exclusive sovereignty of airspace of the United States.” Paragraph (b) of this section directs the FAA to “develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of the airspace.”

In recognition of the threat tall structures can pose to aviation safety, 49 U.S.C. 44718 directed the FAA to promulgate regulations requiring notice of proposed structures or alterations of existing structures when the notice will promote safety in air commerce and the efficient use and preservation of the navigable airspace and of airport traffic capacity at public-use airports. (14 CFR part 77.) The agency was further directed to study such structures and determine the extent of any adverse impacts on the safe and efficient use of the airspace, facilities or equipment.

Consistent with the above statutory and regulatory framework, the FAA has adopted policy to establish the standards for which the FAA identifies "obstructions" and "hazards" in the navigable airspace in furtherance of its responsibilities to manage the navigable airspace safely and efficiently. See 14 CFR part 77, and FAA Order 7400.2, Procedures for Handling Airspace Matters. The FAA issues a determination advising whether the structure would be a hazard to air navigation. The FAA may condition its determination of no hazard with the structure appropriately being marked and lighted, as specified in the determination. FAA criteria for marking and lighting of tall structures are found in Advisory Circular No. 70/7460-1, Obstruction Marking and Lighting.

Unless within the vicinity of an airport,¹ proponents of new structures or alterations of existing structures must file notice with the FAA for "any construction or alteration of more than 200 feet in height above the ground level at its site." 14 CFR 77.13(a)(1). Consequently, as the FAA does not study these structures there is no FAA determination that would specify the marking of these structures.

Background

The emphasis to discover sources of renewable energy in the United States has prompted individuals and companies to explore all means of energy generation. Wind energy, converted into electrical energy by wind turbines, is widely pursued as a viable alternative. In order to determine if a site meets requirements to construct a wind turbine or wind farm, companies erect METs. These towers are used to gather wind data necessary for site evaluation and development of wind energy projects. The data generally is gathered over a year to ascertain if the targeted area represents a potential location for the installation of wind turbines.

Requirements to file notice under part 77 generally do not apply to structures at heights lower than 200 feet AGL unless close to an airport environment. Therefore, the FAA does not have a database of MET locations, nor does it conduct an aeronautical study to determine whether the particular structure would be hazardous to aviation. These towers are often installed in remote or rural areas, just under 200 feet above ground level (AGL), usually at 198 feet or less. These structures are portable, erected in a

matter of hours, installed with guyed wires and constructed from a galvanized material often making them difficult to see in certain atmospheric conditions.

While the METs described above are not subject to the provisions of part 77 and therefore, the FAA does not conduct aeronautical studies to determine whether these structures are obstructions and adversely impact air navigation, the FAA does acknowledge that these towers under certain conditions may be difficult to see by low-level agricultural flights operating under visual flight rules. The color, portability of these towers, their placement in rural and remote areas, and their ability to be erected quickly are factors that pilots should be aware of when conducting operations in these areas.

The FAA has received complaints and inquiries from agricultural operations in remote or rural areas regarding the safety impacts of these towers on low-level agricultural operations. In addition, representatives from the National Agricultural Aviation Association (NAAA) met with the FAA on November 16, 2010 to discuss safety specific concerns of the aerial application industry. The NAAA suggested safety guidelines and marking and lighting criteria in order to reduce the risks for aerial applications. A copy of the material provided by NAAA has been placed in the docket.

Proposed Guidance

The FAA is considering revising AC No. 70/7460-1, Obstruction Marking and Lighting, to include guidance for the voluntary marking of METs that are less than 200 feet AGL. The FAA recognizes the need to enhance the conspicuity of these METs, particularly for low-level agricultural operations and seeks public comment on the guidance provided below.

The FAA recommends that the towers be painted in accordance to the marking criteria contained in Chapter 3, paragraphs 30-33 of AC No. 70/7460-1. In particular, we reference paragraph 33(d), which discusses alternate bands of aviation orange and white paint for skeletal framework of storage tanks and similar structures, and towers that have cables attached. The FAA also recommends spherical and/or flag markers be used in addition to aviation orange and white paint when additional conspicuity is necessary. Markers should be installed and displayed according to the existing standards contained in Chapter 3, paragraph 34 of AC No. 70/7460-1.

The FAA is also considering recommending high visibility sleeves on

the outer guy wires of these METs. While the current Obstruction Marking and Lighting Advisory Circular does not contain such guidance for high visibility sleeves, the FAA specifically seeks comments on this recommendation.

The FAA anticipates that a uniform and consistent scheme for voluntarily marking these METs would enhance safety by making these towers more readily identifiable for agricultural operations.

Issued in Washington, DC, on December 29, 2010.

Edith V. Parish,

Manager, Airspace, Regulations and ATC Procedures Group.

[FR Doc. 2010-33310 Filed 1-4-11; 8:45 am]

BILLING CODE 4910-13-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R06-OAR-2010-0846; FRL-9246-8]

Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to disapprove a portion of the State Implementation Plan (SIP) revision submitted by the State of New Mexico for the purpose of addressing the "good neighbor" requirements of section 110(a)(2)(D)(i) of the Clean Air Act (CAA or Act) for the 1997 8-hour ozone National Ambient Air Quality Standards (NAAQS or standards) and the 1997 fine particulate matter (PM_{2.5}) NAAQS. The SIP revision addresses the requirement that New Mexico's SIP must have adequate provisions to prohibit emissions from adversely affecting another state's air quality through interstate transport. In this action, EPA is proposing to disapprove the New Mexico Interstate Transport SIP provisions that address the requirement of section 110(a)(2)(D)(i)(II) that emissions from New Mexico sources do not interfere with measures required in the SIP of any other state under part C of the CAA to protect visibility. In this action, EPA is also proposing to promulgate a Federal Implementation Plan (FIP) to prevent emissions from New Mexico sources from interfering with other states' measures to protect

¹ 14 CFR 77.13(a), paragraphs (2), (3), (4) and (5) are not relevant to this issue.

Testimony to the House Industry, Business and Labor Committee
3 - 15 - 11
In Support of SB 2206

Brian Rau, representing the *North Dakota Agricultural Aviation Association*

Chairman Keiser and members of the House Industry, Business and Labor Committee:

For the record, my name is Brian Rau and I farm and operate a commercial aerial application business near Medina, North Dakota. I aerially apply crop protection materials, spread cover crop seed for erosion control and assist local fire districts with aerial fire suppression. I am here today on behalf of the *North Dakota Agricultural Aviation Association* (NDAAA). NDAAA represents 103 aerial applicators in the state. NDAAA works to promote aerial application, aviation safety and the safe use of pesticides in the state.

NDAAA supports SB 2206 due to the increase in safety it would bring to Aerial Applicators and others involved in low level aviation operations such as Emergency Medical Services (helivac), aerial fire suppression, animal damage control operations, State Game and Fish aerial operations, and power line and pipeline aerial patrols. SB 2206 addresses the marking, and location reporting of *Anemometer Towers* commonly called *METs* (meteorological evaluation towers or meteorological testing towers.) These towers are used for collecting data regarding wind speed and direction.

METs are erected in an area in advance of wind energy development, however some remain in place after a wind energy conversion facility is installed. METs are typically 198 feet tall (above ground level) which is just under the 200 foot or above level that federal regulations would require a *hazard determination* which would result in marking and lighting. The *Federal Aviation Administration* (FAA) is currently considering an *advisory circular* to request companies to mark MET's, but is not at this time considering a rule change. The States of South Dakota and Wyoming have enacted legislation requiring the marking and location reporting of METs. The North Dakota Aeronautics Commission has sent letters to known wind and tower companies requesting that they mark their METs, but we still find most METs are unmarked.

The METs have characteristics that make them particularly hazardous. The combination of slim, grey color, guy wires, no footprint on the ground (see attached pictures) and their ability to go up in a short period of time all make for an accident waiting to happen. Aircraft collisions with towers usually result in fatal injuries. Underscoring the importance and urgency of this issue is a January 10th 2011 collision of an aircraft with a MET in California which resulted in fatal injuries to the pilot.

NDAAA supports the requirement for a data base that would be required in SB 2206. The agricultural aviation industry also needs the structures and supporting wires to be properly marked, as we are asked to work close to these structures. A data base alone is not adequate for the work we do. NDAAA believes the State Aeronautics Commission is best suited to develop the marking requirements. There are issues that need to be considered when marking or lighting such as light spectrums that night vision goggles use and the consideration of an expected advisory from the Federal Aviation Administration.

Low level flight which is required for many types of operations uses the principal of "See and Avoid" You cannot avoid what you cannot see. This issue is about lives. NDAAA strongly supports the passage of SB 2206. Thank you for the opportunity to address the committee and for the consideration of my comments.

Find The 198-Foot Tower.



Now Imagine Finding It While Flying 130 mph.

Pilots of low-flying aircraft can't avoid what they can't see. Unmarked meteorological testing towers for wind power development are a deadly hazard for agricultural pilots, emergency medical helicopters, aerial firefighters and other low-flying aircraft.

These thin, portable towers can pop up without warning, are unlisted on aerial maps and are

nearly invisible to pilots. Rising just shy of 200 feet, these towers avoid FAA tower marking regulations in most cases.

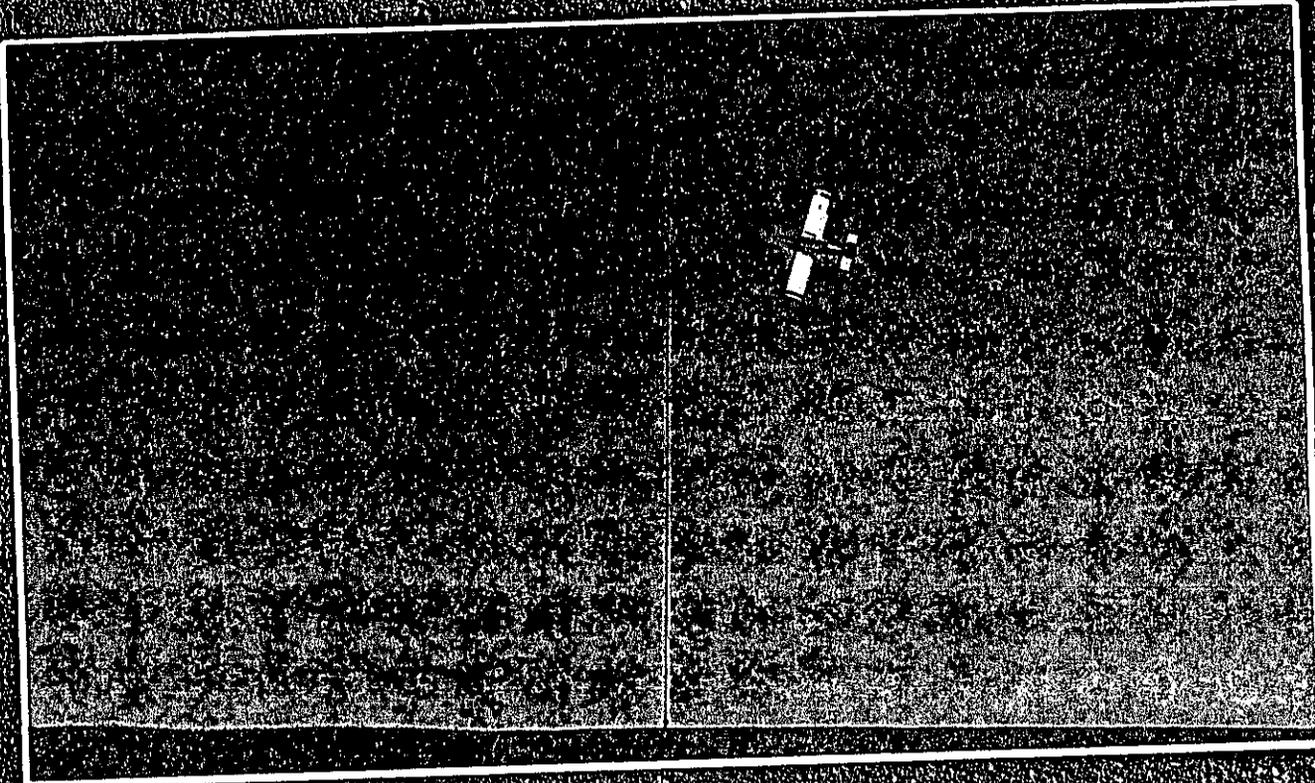
Let's fix this flaw before it becomes a fatal one. Responsible wind power development should include towers that are properly sited, marked and lit.

Let's Be Fair About Sharing The Air
Learn more at www.agaviation.org/towers.htm

A MESSAGE BROUGHT TO YOU BY



Just One Skinny Steel Tower Can Ruin The Whole Day.



One Accident Is One Too Many.

Pilots of low-flying aircraft can't avoid what they can't see. Unmarked meteorological testing towers for wind power development are a deadly hazard for agricultural pilots, emergency medical helicopters, aerial firefighters and other low-flying aircraft.

These thin, portable towers can pop up without warning, are unlisted on aerial maps and are

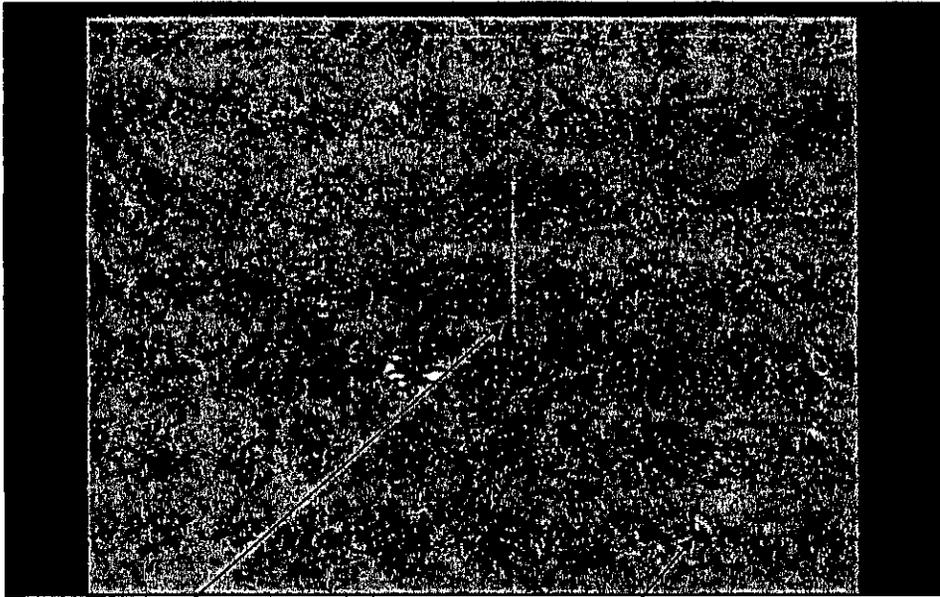
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Let's fix this flaw before it becomes a fatal one. Responsible wind power development should include towers that are properly sited, marked and lit.

Let's Be Fair About Sharing The Air
Learn more at www.agaviation.org/towers.htm

A MESSAGE BROUGHT TO YOU BY

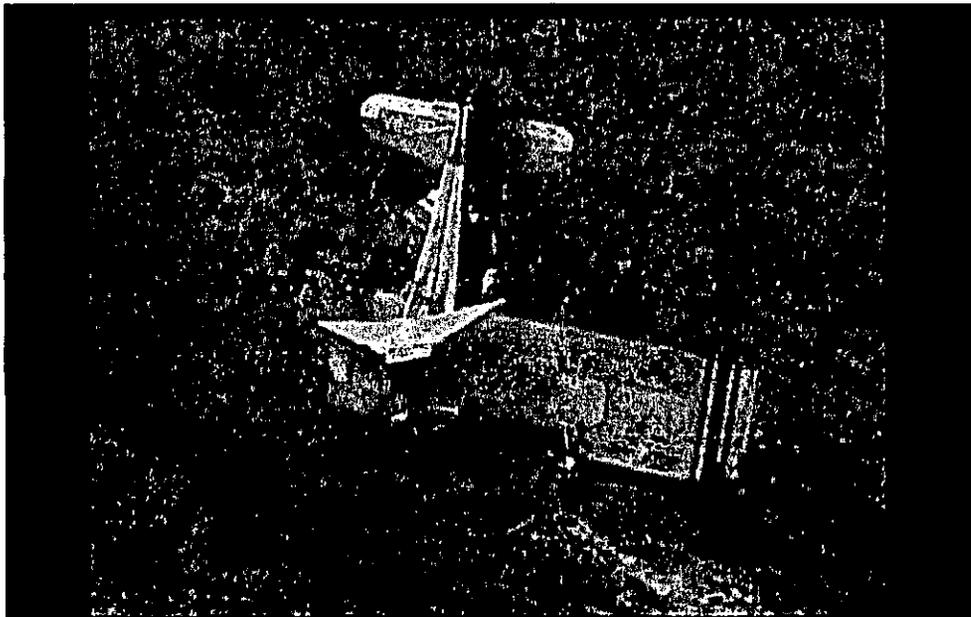




Unmarked MET

Crash site

This MET is not the one involved in the accident. There were 2 METs in close proximity.



Testimony 4

Testimony to the House Industry, Business and Labor Committee

3-15-2011

In Support of SB 2206

Chairman Keiser and members of the House Industry, Business and Labor committee:

For the record my name is Matt Hovdenes. I am an aerial applicator in Grandin ND. I aeri ally apply crop protections products to crop and rangeland in North Dakota. I am the current president of the North Dakota Agricultural Aviation Association. I also am a member of the North Dakota Aviation Council.

I support SB 2206 because of the significant danger anemometer/ Meteorological Evaluation Towers pose to aviation in North Dakota. In addition to my personal experience with the dangers anemometer towers pose I would like to point out several other groups and entities that recognize the danger and that support getting anemometer towers marked.

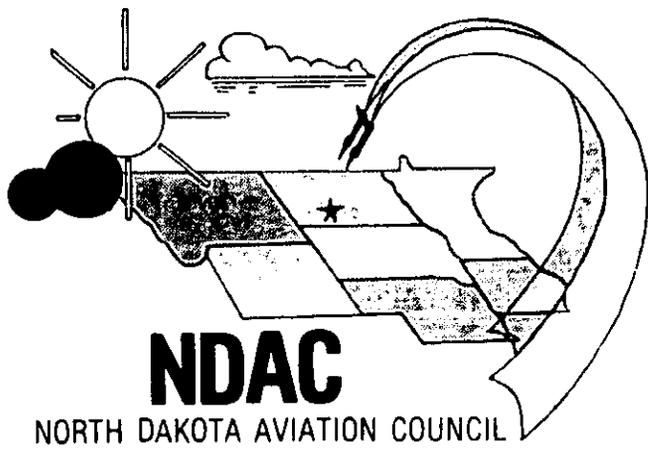
On January 20th 2011 the North Dakota Aviation Council voted to support SB 2206. The North Dakota Aviation Council has representatives from eight different aviation groups in North Dakota. Attached to this testimony you will find a letter of support from Aviation Council Chairman Don Larson.

The Federal Aviation Administration recently issued proposed guidance for marking anemometer towers. While if implemented this guidance would be voluntary, the FAA does realize the significant threat to aviation safety these towers present.

On March 11, 2011 the National Transportation Safety Board issued a Safety Alert to pilots regarding Meteorological Evaluation Towers. Attached to this testimony is a copy of that Safety Alert. The Safety Alert spells out some issues specific to Anemometer towers that make them so dangerous. The Safety Alert also specifically points out three fatal accidents with anemometer towers in the United States. The Safety Alert also acknowledges the proposed guidance that is expected from the Federal Aviation Administration. Important to note, the National Transportation Safety Board states specifically that it is concerned that the proposed guidance would not be mandatory and "without such mandatory application and marking requirements for METs, many METS will still be constructed without notice to the aviation community and will fail to be marked appropriately."

On March 30th, 2009 the North Dakota Aeronautics commission sent out a letter to wind stakeholders in North Dakota requesting them to voluntarily mark the anemometer towers. Since that letter was sent out there has not been a significant change in the marking of anemometer towers in North Dakota.

In closing, I ask you to give a do pass vote for SB 2206 in the interest of saving lives. Thank you for the opportunity to address the committee and for consideration of my comments.



March 14, 2011

Chairman Keiser and Members of the House Industry, Business and Labor Committee

Re: Senate Bill 2206

On behalf of the North Dakota Aviation Council, I am asking for your support on Senate Bill 2206. The intent of the bill is to require marking and lighting of anemometer towers so they are visible to pilots flying at lower altitudes in fix wing aircraft and helicopters. In North Dakota this type of flight is typically includes medical life flights, Game and Fish Department work, pipe line patrol, National Guard activity and crop spraying.

Because the towers are under 200 feet high, the Federal Aviation Administration (FAA) does not require that the towers be marked. The problem is not only that the towers are so difficult to see, but that they are many times erected in a matter of hours. An aircraft could fly over an area one day observing nothing and the next day there could be a tower in his path.

For your information, the NDAC is made up of eight different aviation related groups in North Dakota.

I respectfully request your favorable consideration on SB2206.

Sincerely,


Donald I. Larson, Chairman
North Dakota Aviation Council



NTSB SAFETY ALERT

National Transportation Safety Board

★ Meteorological Evaluation Towers

Pilots urged to be vigilant for Meteorological Evaluation Towers

The Problem

- Meteorological Evaluation Towers (METs) are used to measure wind speed and direction during the development of wind energy conversion facilities. METs are made from galvanized tubing (or other galvanized structure) with a diameter of 6 to 8 inches and are secured with guy wires that connect at multiple heights on the MET and anchor on the ground.
- Many METs fall just below the 200-foot Federal Aviation Administration (FAA) threshold for obstruction markings. They can also be erected quickly and without notice to the local aviation community, depending upon their location.
- Because of their size and color, pilots have reported difficulty seeing METs from the air. Therefore, METs could interfere with low-flying aircraft operations, including those involving helicopter emergency medical services, law enforcement, animal damage control, fish and wildlife, agriculture, and aerial fire suppression.
- The NTSB has investigated several fatal accidents involving aircraft collisions with METs:
 - On January 10, 2011, a Rockwell International S-2R, N4977X, collided with a MET during an aerial application in Oakley, California.
 - On May 19, 2005, an Air Tractor AT-602, N9017Z, collided with a MET that was erected 15 days before the accident in Ralls, Texas.
 - On December 15, 2003, an Erickson SHA Glasair, N434SW, collided with a MET near Vansycle, Oregon.
- While Wyoming and South Dakota have implemented requirements for METs to improve the safety of low-flying aircraft, not all states have such requirements for METs. (Wyoming maintains an online database of METs and requires all METs to be registered and marked so that they are visible from a distance of 2,000 feet. South Dakota requires that METs be marked.)

- The FAA has issued a notice of proposed rulemaking (docket number FAA-2010-1326) to update Advisory Circular (AC) 70/7460-1K to recommend the marking of METs. However, the NTSB is concerned that the application of the AC is voluntary, and, without mandatory application and marking requirements for METs, many METs will still be constructed without notice to the aviation community and will fail to be marked appropriately.

What can pilots do to avoid METs?

- Maintain vigilance for METs when conducting low-altitude flights.
- If you locate a MET in your area, let other pilots know about the location of the MET. FAA Safety Team members are also exploring methods of notifying pilots of the location and height of METs and are working to educate MET owners, builders, and communities on the flight-safety issues presented by METs.
- Encourage the marking of METs in your area.

Need more information?

NTSB accident database for information on MET accidents: <http://www.nts.gov/ntsb/query.asp>

FAA AC 70/7460-1K:

[http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/b993dcdcf37fcdc486257251005c4e21/\\$FILE/AC70_7460_1K.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/b993dcdcf37fcdc486257251005c4e21/$FILE/AC70_7460_1K.pdf)

Proposed revisions to FAA AC 70/7460-1: <http://www.gpo.gov/fdsys/pkg/FR-2011-01-05/pdf/2010-33310.pdf>

National Agricultural Aviation Association: www.agaviation.org/content/lets-be-fair-about-sharing-air

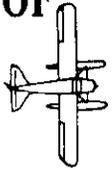
South Dakota House Bill 1155: <http://legis.state.sd.us/sessions/2010/Bill.aspx?Bill=1155>

Wyoming database of METs: <http://gf.state.wy.us/METTowers/default.aspx>

SA-016 March 2011



THE INTERNATIONAL ASSOCIATION OF NATURAL RESOURCE PILOTS



SB2206

Hello my name is a Jeff Faught. I am the President of the International Association of Natural Resource Pilots (IANRP) and am a pilot for the North Dakota Game and Fish Department.

It is common for pilots in the natural resource industry to fly at low altitudes doing game surveys, taking photos, locating animals with transmitters, capturing, providing search and rescue services, performing enforcement missions and other maneuvers requiring flight at low levels.

The advent of meteorological evaluation towers (MET) has introduced a hazard to this type of flying that needs to be addressed. These towers are hard to see even in good light conditions, but in flat light conditions they are at times impossible to see until you are dangerously close. While flying at certain altitudes and distances away from them they blend into the terrain and at first glance may appear to be a fence rather than a tower. The guy wires are not visible unless the light is just right or you are too close. These difficulties are experienced during all seasons.

I have seen three of these towers with orange and white paint from the top to the bottom and it made a big difference in seeing them at a distance but the guy wires were still nearly invisible.

It is my recommendation to pass the SB2206 for the safety of North Dakota pilots.

Thank you,
Jeff Faught
IANRP President
NDGF Pilot
701-220-7248



P.O. Box 2599
Bismarck, ND 58502
(701) 355-4458
FAX (701) 223-4645

MEMBERS

- AmeriFlax
- BNSF Railway Company
- Independent Beef Association of North Dakota
- Milk Producers Association of North Dakota, Inc.
- Minn-Dak Farmers Co-op
- North Dakota Ag Aviation Association
- North Dakota Ag Consultants
- North Dakota Agricultural Association
- North Dakota Agri-Women
- North Dakota Association of Agricultural Educators
- North Dakota Association of Soil Conservation Districts
- North Dakota Barley Council
- North Dakota Beef Commission
- North Dakota Corn Growers Association
- North Dakota Corn Utilization Council
- North Dakota Crop Improvement Association
- North Dakota Department of Agriculture
- North Dakota Dry Bean Council
- North Dakota Dry Edible Bean Seed Growers
- North Dakota Elk Growers
- North Dakota Ethanol Council
- North Dakota Farm Bureau
- North Dakota Farm Credit Council
- North Dakota Farmers Union
- North Dakota Grain Dealers Association
- North Dakota Grain Growers Association
- North Dakota Lamb and Wool Producers Association
- North Dakota Oilseed Council
- North Dakota Pork Council
- North Dakota Soybean Council
- North Dakota Soybean Growers Association
- North Dakota State Seed Commission
- North Dakota Stockmen's Association
- North Dakota Wheat Commission
- North Dakota State University and University Extension
- Northern Canola Growers Association
- Northern Food Grade Soybean Association
- Northern Plains Potato Growers Association
- Northern Pulse Growers Association
- Red River Valley Sugarbeet Growers

Testimony 6

**Testimony of Alexis Brinkman
North Dakota Ag Coalition Administrator
SB 2206
March 15, 2011**

Mr. Chairman and members of the Committee, my name is Alexis Brinkman, and I am the administrator of the North Dakota Ag Coalition. On behalf of the Ag Coalition, I would encourage your support of SB 2206, which requires the marking of Meteorological Testing Towers.

The Ag Coalition has provided a unified voice for North Dakota agricultural interests for more than 25 years. Today, we represent more than 40 statewide organizations and associations that represent specific commodities or have a direct interest in agriculture. The Ag Coalition takes a position on a limited number of issues brought to us by our members that have significant impact on North Dakota's agriculture industry.

Agricultural aviation is an essential tool in today's agriculture industry. Marking these towers and creating a registration of their locations would create a much safer environment for these pilots to help ensure they remain a successful part of North Dakota's agriculture industry.

We would urge a do-pass recommendation on SB 2206.

Testimony 7

**North Dakota Senate Bill 2206
Dale Niezwaag - Basin Electric Power Cooperative
House Industry, Business and Labor Committee
March 15, 2011**

Mr. Chairman and members of the committee, my name is Dale Niezwaag. I represent Basin Electric Power Cooperative and we are opposed to SB 2206 as passed by the Senate.

As a basic explanation of the anemometer or meteorological (MET) towers are normally 190 foot towers with several anemometers located at various heights on the towers. The data obtained by the anemometers is transmitted via cell phone technology so there is no need to visit the sites, once the towers are installed. Normally the tower will remain in place for two to three years then be moved. If a local economic development group is trying to gather data and entice a wind developer to their area, they may leave the tower up longer.

In order for the committee to fully appreciate our opposition I have to discuss 2206 as it was introduced in the Senate and how we got to this point. The reason to walk through all the requirements of 2206 as introduced is because the North Dakota Aeronautics Commission testified in support of all aspects of the bill, so in our opinion if they are the entity in charge of setting the rules it is reasonable to assume that they will support all the rules in the bill and possibly more. Because of this we feel our objections to some of the rules will have little bearing on the outcome. I apologize in advance for the length of my testimony.

SB 2206 as introduced in the Senate required several things.

1. Adding lights to the towers,
2. Developing areas of contrast with surrounding vegetation where guy wires attach to the ground.
3. Fencing the area where the guy wires attached to the ground
4. Placing marking balls on the guy wires,
5. Placing marking sleeves to the guy wires where they attach to the ground
6. Painting the towers,

Item 1: We opposed adding the light for several reasons, including installation and repair costs. I have attached a price sheet to my testimony summarizing the various requirements of 2206 as

introduced in the Senate. If we put up a light that is reliable and provides notice if it malfunctions the cost can run as high as \$14,000. If a light malfunctions you cannot climb the tower to repair it, we have to send a crew to drop the tower, fix the light then put the tower back up for a cost around \$5,000. The reasons given by the proponents of the bill for needing a light on the tower was to make emergency evacuation flights aware of the tower location. In conversations with law enforcement and emergency flight services we were told that having the Global Positioning System (GPS) coordinates would be very useful in avoiding the towers at night. One of our proposals with the original bill was to provide the coordinates for all the towers that the proponents placed into the hoghouse amendment.

Item 2: Developing areas of contrast with surrounding vegetation where guy wires attach to the ground. As we testified at the Senate hearing we opposed this provision because we didn't know how this could be accomplished. Depending on where the towers are located the ground can change from black to green, to brown to white within twelve months. Are we expected to go out each season and develop a contrasting area to the current situation?

Item 3: Fencing the area where the guy wires attached to the ground. In Basin Electric's case we put up cattle panels to keep equipment from getting too close to the guy wires and possibly damaging the towers. In some cases landowners don't want any additional obstructions around the towers so we leave that decision up to the landowner.

Item 4: Placing marking balls on the guy wires. Our concern on marker balls was twofold. As I stated earlier there are several anemometers at various heights on the towers and large marker balls can alter the air flow around the tower and in turn alter the data obtained. These large balls also attract ice and have the ability to increase the likelihood of tower failure during icing conditions. Industry investigated other options to marker balls and have identified a marker called a swan diverter which is seven inches around, twenty inches long, provides 360 degree visibility does not divert airflow and creates less of a problem during icing conditions. A brochure on this item is also attached to my testimony.

Item 5: Placing marking sleeves to the guy wires where they attach to the ground. Industry supports this requirement.

Item 6: Painting the towers. Industry supports this requirement with the condition that it be given time to accomplish this. To paint towers that are already standing they must be dropped to the ground painted and reassembled, so industry agreed to a three year time frame to accomplish all the changes.

As you will see in the attached cost sheet, based on discussions with vendors and our installation contractor, the final costs that we came up with to comply with all the requirements in the bill ranged from \$6,500 to over \$24,000 for new towers and \$9,000 to \$26,000 to retrofit existing towers. When you consider that the cost of an installed tower runs from \$26,000 to \$32,000, the costs to meet the proposed new requirements could make the cost of installing a tower prohibitive for wind prospecting at many sites.

So let's forget about costs for a moment, as the proponents have said this bill is about public safety and pilots lives. So what are the problems we are trying to solve?

Problem 1: Making the towers and guy wires more visible to low flying aircraft during daylight hours.

Industry Solution: Painting towers and marking guy wires before new towers are erected and marking already installed towers within three years.

Problem 2: Identifying towers to emergency aircraft at night.

Industry Offered Solution: Agreeing to provide the GPS locations of all existing tower within 60 days of the passage of this bill and providing GPS location of all new towers ten days before they are installed, and agreeing to pay a fee of up to \$100 per tower to set up a centralized system.

In our opinion industry has stepped up to the plate and provided solutions to the problems identified. But while this bill was in the Senate and we were trying to negotiate details with the proponents they abruptly cut off discussions and hoghoused the bill giving power to set all rules to the Aeronautics Commission without giving us an opportunity to even discuss other options.

So Mr. Chairman and members of the committee that is why we oppose SB 2206 as it came out of the Senate and feel our objections and solutions would fall on deaf ears with the Aeronautics Commission. We also strongly feel that the legislature, not the Aeronautics Commission, after hearing from both sides should set the rules.

We understand the concerns of the Aerial Applicators Association but we also believe that developers and other organizations need to be able to conduct wind research and keep the wind industry moving forward in the state.

I can't speak for other wind developers but as an indication I can tell you what Basin Electric did when a bill similar to the one that was introduced in the Senate was passed by the legislature in South Dakota. Basin Electric had 6 MET towers in storage from our previous wind projects that we were going to install in other areas to gain information for possible future projects, but after evaluating the costs to meet the requirements, we decided to not install those towers in South Dakota. If this bill is passed as it came from the Senate it will also eliminate that option in North Dakota.

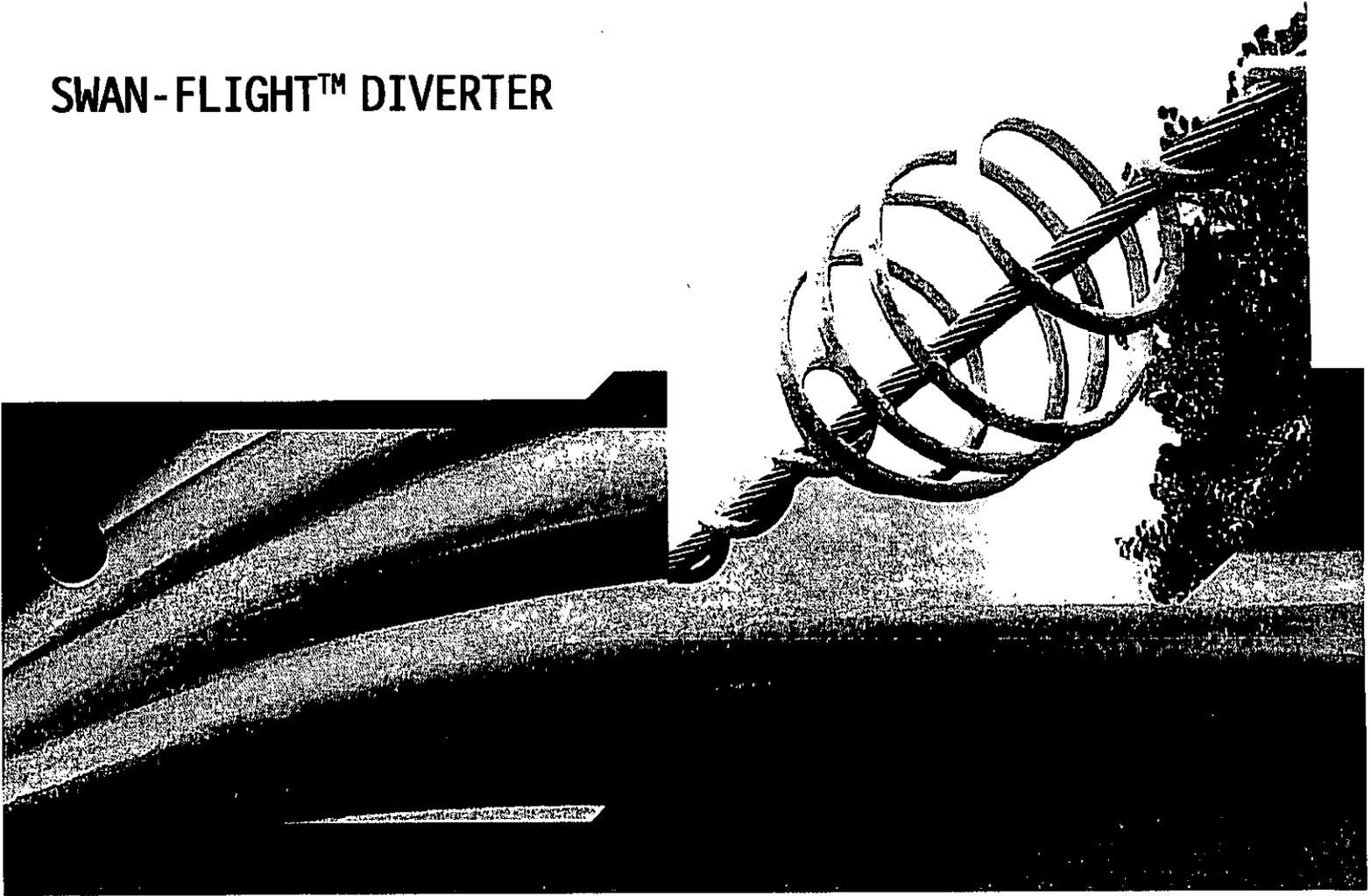
Mr. Chairman and members of the committee based on these reasons we are opposed to 2206 as passed by the Senate written and would urge a "do not pass" vote on the bill. We would however be willing to support a bill with the provisions I have outlined in my testimony.

This concludes my testimony and I will try to answer any questions from the committee.



PREFORMED LINE PRODUCTS
The connection you can count on.

SWAN-FLIGHT™ DIVERTER

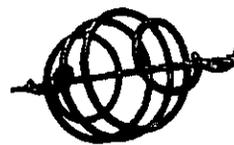


● COMMUNICATIONS

● ENERGY

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PLP® Distribution Products

SWAN-FLIGHT™ DIVERTER

Description

The Preformed Line Products SWAN-FLIGHT Diverter is designed for use on overhead conductors to create greater visibility for avian flight paths on overhead lines and tower down guys. Offering little wind resistance, it reduces hazards to both lines and birds. For low and medium voltage construction, apply the SWAN-FLIGHT Diverter to phase conductors (bare or jacketed). For high voltages, it is typically used on shield wire.

The SWAN-FLIGHT Diverter is lightweight, offers little wind resistance and is easily and quickly applied by hand or hot stick. The positive grip on the conductor is designed to ensure that the SWAN-FLIGHT Diverter remains in the applied location and does not move along the span under Aeolian vibration or other conditions.

Materials

Manufactured from rigid high impact polyvinyl chloride (PVC), the SWAN-FLIGHT Diverter possesses excellent chemical resistance, strength properties and will retain good physical characteristics within a range of extreme temperatures. Industrial fumes and salt water cannot seriously degrade the properties of rigid PVC.

Spacing

For optimal results, spacing distances are generally recommended at 15' intervals, depending upon local conditions.

Since wind resistance is very limited, sufficient SWAN-FLIGHT Diverters can be used to ensure adequate visibility without creating stresses on the line. When marking adjacent spans, overall visibility is improved by staggering the placement between the spans.

Features

SWAN-FLIGHT Diverters are designed to offer the following advantages:

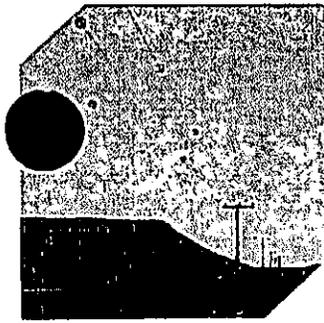
- Increased conductor profile to provide increased visibility where large, slow moving bird flight paths are present
- Economical and easily applied
- Lightweight
- Long service life without deterioration of material properties
- Minimal wind resistance
- Manufactured from gray or yellow high impact PVC with UV protection

Visibility

The diverter section increases the visible profile of the cable or conductor to ensure safety, but avoids an undesirable bulky outline.

Application

Ensure the correct size SWAN-FLIGHT Diverter is used. For detailed installation description, refer to the application procedure. Hot stick application is fast and simple with standard equipment.



World Headquarters
680 Beta Drive
Cleveland, Ohio 44143

Mailing Address:
P.O. Box 91129
Cleveland, Ohio 44101

Telephone: 440.461.5200
Fax: 440.442.8816
Web Site: www.preformed.com
E-mail: inquiries@preformed.com

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EN-SS-1076
08.10.2M

SWAN-FLIGHT Diverter - Product Data

PLP Catalog Number	Conductor Range (Inches)		Overall Length (Inches)	Diameter of Diverter Coil (Inches)	Diameter of PVC Rod (Inches)	Color Code
	Min.	Max.				
SFD-0445	0.175	0.249	20	7.0	0.375	Black
SFD-0635	0.250	0.349	23	7.0	0.375	Blue
SFD-0890	0.350	0.449	25	7.5	0.375	Brown
SFD-1140	0.450	0.599	35	8.0	0.375	Green
SFD-1520	0.600	0.770	38	8.0	0.500	Purple
SFD-1960	0.771	0.858	38	8.0	0.500	Red
SFD-2220	0.859	0.942	40	8.0	0.500	Orange
SFD-2480	0.943	1.121	40	8.0	0.500	Pink
SFD-2700	1.122	1.306	40	8.0	0.500	Gray*
SFD-3035	1.307	1.530	46	8.0	0.500	Black

*Gray is the standard color. For yellow add "-Y" after the catalog number.
For voltage over 230kv, add "-B" for black semi-conductive material.

Comparative Estimated Costs of SB 2206:

Standard Equipment Today:

60M NRG Tower System – standard tower:		\$17,000
Cell Phone Communication System:	\$1,500	
Installation in ND:		\$5,000-\$9,000
Decommissioning in ND:		\$2,500 to \$5,000
Estimated Total:		\$26,000 to \$32,500

Added Costs under SB 2206:

New Installation Under Proposed Legislation:

Painted Tower Option (FAA):		\$2,500
Marker Balls:		\$1,000
Cost to Install Marker Balls		\$500
Fencing & Ground Contrast (\$ vary on site/ground type)		\$500 to \$5,000
Estimated Total		\$4500 to \$9500

Retrofit Existing Towers:

Take down and re-erect tower:		\$3000-\$5000
Retrofit Painting in the field:		\$3,500-\$5,000
Mileage to site & per diem for crew:		\$500-\$1500
Estimated Total		\$7000 to \$11,500

Lighting in Excess of FAA Requirements:

Installation of red light (New or Retrofit)		\$500
Non-FAA rated - Avlite from Australia		\$550
FAA Approved - Flash Technologies (US)		\$4,500
Photovoltaics and Battery System to power light		\$8,500
Monitoring System to Ensure Compliance	\$1,000	\$1,000
Estimated Total		\$2,050 to \$14,500

Estimated Cost Impact of New Legislation

	<u>Range</u>
Added Cost for New Towers:	\$6,500 to \$24,000
Added Cost for Retrofit:	\$9,000 to \$26,000

Note: Wide range of estimated cost is primarily due to uncertainty of availability of lights to meet new non-standard lighting requirement and vague language regarding varying field conditions (particularly uncertain ground contrast requirements)



Software Development Division Budget Estimate

To:	Date Issued:	Prior Est. Date:
Lawrence Taborsky Aeronautics Commission	03/01/2011	
	From: Paula Dosch	
	Prepared By: Ron Nelson/Bob Nutsch	
Project Description:		
Create a system to inventory the location of Anemometer towers in North Dakota.		
WMS Work Order Number: 172550	WMS Service Request: 1325282	

ITD is recommending your agency budget **\$74,862** for this project. This amount includes an estimated **\$68,056** based on requirements we received during the interview process plus an additional **\$6,806** for scope changes. The additional **10%** is based on ITD's experience with scope changes in projects this size. Including this additional amount will give your agency the flexibility to cover typical scope changes, and remain within your budgeted amount. A more accurate estimate will be prepared once this project has started and the analysis phase is completed. The cost to complete the analysis phase is estimated to be approximately **\$12,389**.

What you get for your money from ITD

ITD estimates this project to take **5 months**. This timeframe is a projected timeframe based on typical project staffing levels. The actual timeframe will be determined during the Planning Phase and will be based on the availability of customer and ITD resources at that time.

ITD suggests you budget **\$520** per month for the on-going cost of running the application. This amount includes the hosting charges, estimated storage and Software Development maintenance costs. All ITD services will be billed to your department monthly at actual cost.

Should you decide to proceed with this project, please approve the cost estimate via the online Work Management System. Upon your approval, you will be prompted to submit a service request under the existing work order. All ITD services relating to this project will be billed to your department monthly at actual cost.

At the start of the project ITD will review any estimate over 90 days old. If necessary a revised estimate will be issued.

Project Description

This Cost Estimate includes the costs to create a system to inventory the location of Anemometer towers in North Dakota. There are 4 companies that erect Anemometer towers. These towers are used to gather data for potential wind farm locations. The towers are usually less than 200 feet and can be erected anywhere. These towers don't have a warning light since they are less than 200 feet and can cause problems for crop dusters and emergency personnel. This system would allow the Aeronautics Commission to maintain the companies in a database and then allow those companies to enter the location and effective dates of the towers. An inquiry and download would allow the location to be used by Crop Dusters, Emergency Personnel, the FAA and even the general public.

Assumptions

The one-time costs (development) of the routines are based on the following assumptions:

- This cost estimate is based on a blended hourly rate of \$100 due to the unknown availability of ITD Software Development staff at the time this estimate was issued. If only ITD Software Development staff work on this project, billing will be at the normal ITD Software Development (11-13) biennium rates.
- ITD will assign a project manager to the project.
- This application could be written in Java or .Net.
- A SQL Server or an Oracle Database could be used.
- The application will secure user access to functionality using Microsoft Active Directory accounts/groups and/or IBM Tivoli Directory Server (TDS) (State of North Dakota Login ID).
- All application data will be transmitted securely using a SSL certificate.
- The application will be load tested to ensure the application performs under stress and does not cause any server performance issues.
- Department staff will produce any necessary Help documents/user manuals, implementing the documents as HTML web page(s) available from a department's web site.
- Department staff will provide any necessary training documents or training sessions for application users.
- The project will follow ITD's software development quality assurance methodologies and processes.

Determining Costs

The cost estimate includes the following processes:

Process	Description
Internal Processes	
Admin Login	The Admin login would allow access to the application for the Aeronautics Commission to administer the companies that erect anemometer towers.
Search Add/Maintain/Delete Companies	This process would allow for the Aeronautics Commission to add, maintain and delete companies that erect anemometer towers. It would also allow them to maintain the billing information for the companies (very minimal – date paid, this is a yearly fee).
Add/Maintain Security	This would allow the Aeronautics Commission to administer security for the companies and allow then access to the application.
Tabular data converted to spatial	Data collected by the application will be converted to a spatial format on the GIS Hub for display in the map.
Develop project file and map service	Data layers including anemometer locations will be developed into a map, storing this information into an MXD project file which will be used as the source of the map service which is used by the mapping application.
External Processes	
Company Login	This process would allow companies to login in externally to the application to maintain the location of their towers.
Add/Maintain/Delete anemometer towers	This process would allow companies to add, maintain and remove the location of anemometer towers using global-positioning coordinates. It would allow other details to be added with an effective date. Only the effective date and the location would be available for inquiry and downloading. When the tower is removed, the record would be removed from the database.
Location Preview	After entering coordinates, the location will be displayed on a map for verification.
Public	
Search/Inquiry/ Download	This option would allow anyone to display the global-positioning coordinates of the towers and the effective date of the towers. It would also have a download option.
Mapping Application	Vendor from IT Professional Services Contract Pool will develop a mapping application based on Esri JavaScript API. This application will have basic tools including: zoom, pan, print (to PDF, landscape/portrait, scale bar, north arrow, legend, title, date/time stamp)

One-Time Cost for System Development

The cost for development is estimated to be \$74,862. This amount includes an estimated \$68,056 based on requirements and an additional \$6,806 for scope changes. The additional 10% is based on ITD's experience with scope changes in projects this size. Including this additional amount will give your agency the flexibility to cover typical scope changes, and remain within your budgeted amount. A more accurate estimate will be prepared once this project has started and the analysis phase is completed.

-Going Monthly Costs

On-going monthly costs are estimated as follows:

ITD Systems/Programming	\$ 200 per month – used as necessary
Application Server	\$ 320
Total	\$ 520

Application Server costs cover the hosting of the application as well as monitoring the servers and applications for availability.



Providing Customer-Centric Services

The Information Technology Department (ITD) provides technology leadership for state government and the people of North Dakota. ITD exists solely to help State agencies discover, assess, and implement information technologies. ITD's Software Development Division develops, implements, operates and supports software solutions that meet our customer's need as provided in this cost estimate. ITD also provides server computing, local and wide area network support, voice and data technologies, video conferencing, and other emerging technologies. The following overview describes the services ITD considers valuable to our customers. We hope you'll find this helpful in assessing the value of our services.

State Government IT Partner

ITD knows the business of North Dakota State government and understands inter-agency relationships. We've been servicing State agencies since 1968. Upon request, we'll provide references offering honest referrals about our services.

Our customer relationships are long-term partnerships.

Affordable Cutting Edge Technology

ITD helps agencies discover best fit solutions for their agency at affordable rates. ITD charges only to recover costs - we retain no profit with our low rates. Our staff is trained in many new and existing technologies, so we can readily assess customer requirements and provide solutions that best fit an agency's needs. ITD implements and supports IT solutions on modern hardware in modern facilities using operating systems and software no older than current version minus 1.

Whenever it's necessary to extend our capabilities, we augment our current staff with outside vendors to meet demands.

Quality

ITD develops applications within the processes of a structured systems development methodology. This includes functional testing and all applications are tested for usability and performance (load tested). ITD Meets State & Federal Audit Compliance. Our infrastructure and operations processes are reviewed by and meet state and federal audit requirements. ITD Supports State Enterprise Architecture Standards and all software and infrastructure meet North Dakota Enterprise Architecture standards.

We build compliance into our service offerings which relieves the customer of State standard compliance concerns.

Dedicated & Experienced Staff

ITD employees submit to an FBI background check and are bound by the same confidentiality requirements as agency staff. ITD's staff is cross-trained to provide continuous backup. We provide dedicated architects to design effective, top-notch infrastructure for security, system hosting, software development, and telecommunications. Our staff applies formal project management practices to all projects.

ITD strives to retain innovative, talented, and dedicated staff. ITD's staff is tenured with an average of 13 years of service.

Support Structure

ITD offers several levels of customer support, including 24 x 7 support for applications and infrastructure.

Customer Service Surveys indicate 99% of customers are very satisfied with our support.

Flexible Infrastructure

ITD's infrastructure and support structure are designed to meet varied needs. ITD designs and builds applications that can operate in a redundant environment. If one server fails, another server picks up the workload with little or no down time.

We can design and host any size application.

Disaster Recovery

ITD has the tools and resources required to monitor software applications and computer system infrastructure to assure adequate performance and up-time. Applications can be monitored on a 24 x 7 basis. If a disaster occurs in our Computer Systems area or Statewide Network, customer applications can be running within hours.

ITD's standard practice is to keep all data, applications, and systems backed up in a secure location to meet customer expectations.

Security

By investing in the infrastructure and training required to prevent malicious activity within our IT environment, ITD has dedicated staff to assure that customer data and applications are secure.

We use source code control software to provide sound source code management.

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