



MANAGER'S MEMO ITEM

ITEM: Lightening Protection System

WORKSHOP DATE: March 22, 2005

PREPARED BY: Riccardo F. Ginex, Village Manager

BID AMOUNT: \$ _____ **ACCOUNT:** _____

BUDGET AMOUNT: \$ _____

PURPOSE: Informational presentation on the Downers Grove Park District lightning prediction system.

BACKGROUND:

The Downers Grove Park District is in the process of considering the installation of a lightning prediction system in the District's parks. The system is being considered in order to notify park users that lightning is predicted and that necessary precaution should be taken. The Downers Grove Park District Board has asked that their staff review the Thorguard lightning prediction system with the Village Council. Dan Cermak, Park District Director and Gene Cromwell will be in attendance to make the presentation.

ATTACHMENTS:

Thorguard System Information



February 21, 2005

Mr. Rick Ginex, Village Manager
Village of Downers Grove
801 Burlington Avenue
Downers Gove, Illinois 60515

Re: Lightning Prediction System
Council Workshop Presentation

Dear Rick:

As you know the Park District is seriously considering the installation of a lightning prediction system in the District's parks. The system is being considered in order to notify park users that lightning is predicted and that necessary precaution should be taken. There are over 200 Thorguard lightning prediction systems in the area. The system predicts lightning strikes and park users are notified of lightning by a 15 to 20 seconds (audio) siren and a strobe light also is activated at specific locations. When lightning is out of the area 3 short audio sounds will indicate all clear in the park. School Districts 58 and 99 are also considering participating with the park district on this project.

The Park Board has asked that staff review the Thorguard lightning prediction system with the Village Council at the next workshop. Per our conversation, staff will be at the March 22nd, 2005 workshop to review the information.

It is my opinion that the lightning prediction system will make the Downers Grove Park District safer for the tens of thousands of residents and others that utilize the District's primary parks and services.

See you on the 22nd.

A handwritten signature in black ink, appearing to read "Dan A. Cermak".

Dan A. Cermak
Administrator

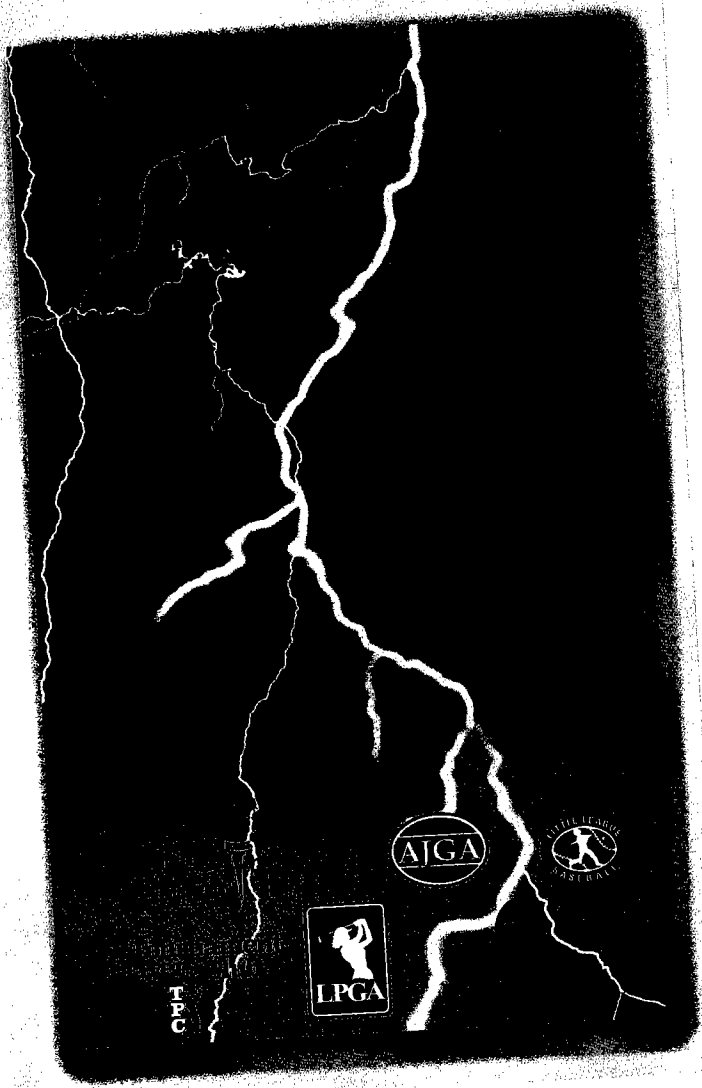
Enclosures

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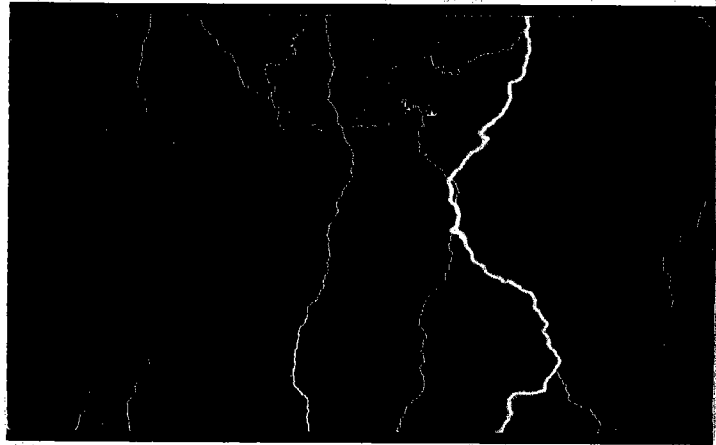
THOR
GUARD, INC.

Lightning Prediction & Warning Systems



PROVEN TECHNOLOGY

Since 1976 **THOR GUARD** systems have reliably and accurately provided advanced warning of the potential for lightning to millions of people. In a developing storm our unique prediction technology evaluates the dynamics of the electrical energy within the atmosphere and automatically provides timely warning alerts. **THOR GUARD** is the world's only true lightning prediction system.

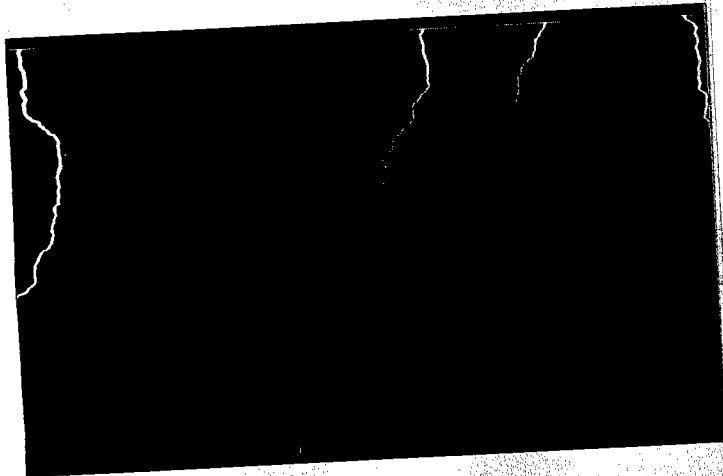


PREDICTION NOT DETECTION

A significant difference between **THOR GUARD** and other lightning warning systems is that ours is based on "time" and the others are based on "distance." **THOR GUARD** is designed to give a "Red Alert" warning (8) to (20) minutes in advance of the first potential strike in your area so you may seek appropriate shelter. Detection systems tell how far away lightning just struck with no way of knowing where it will strike next!

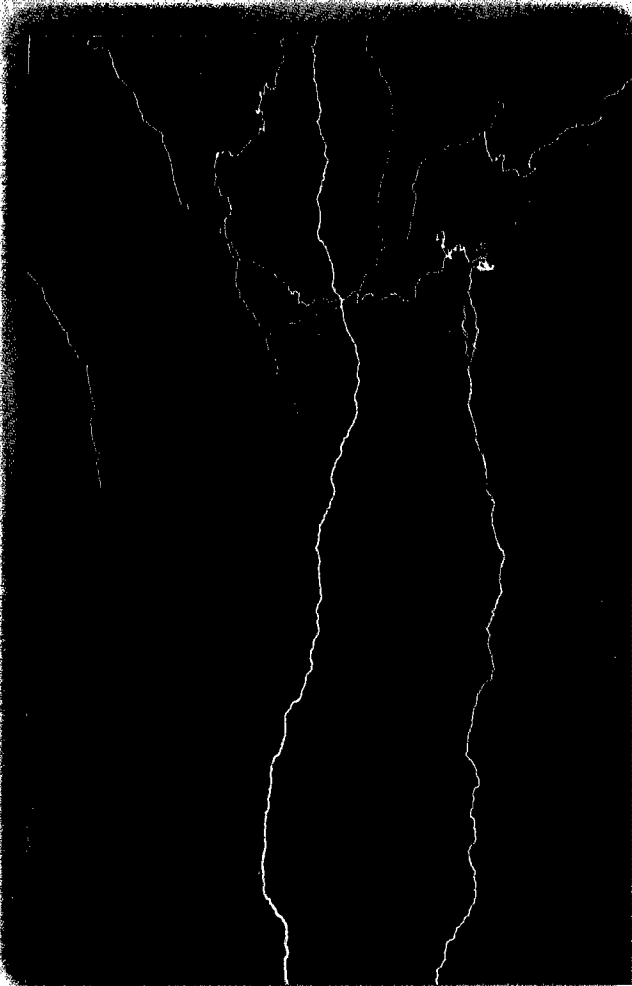
TESTED & ACCEPTED

THOR GUARD lightning prediction systems are "tested" all day, every day, at thousands of lightning critical locations worldwide. We are exclusively relied upon by government agencies, all golf tours worldwide, major airlines and airports, and Olympic venues. All customers demand accuracy without "False Alerts".... **THOR GUARD** delivers!



ACCURATE & RELIABLE

Hundreds of cities have installed our warning systems for safer operations at parks, schools, pools, ballparks, soccer fields and other recreational facilities. Corporate giants such as AT&T, Phelps-Dodge, ALCOA and Motorola have invested in our prediction systems for a good reason - we consistently provide our customers with reliable lightning warning to protect both people and sensitive, expensive equipment.



Lightning Prediction & Warning Systems

1193 Sawgrass Corporate Parkway

Sunrise, Florida 33323

Phone: 954.835.0900

Toll Free: 888.571.1212

Fax: 954.835.0808

E-mail: sales@thorguard.com

www.thorguard.com

THOR GUARD LIGHTNING SYSTEMS

WHAT IS THOR GUARD?

Thor Guard is a scientific instrument which utilizes a computer and sensor to monitor the atmosphere and provide an advance warning of lightning.

HOW DOES IT WORK ?

Thor Guard monitors the earth's electrostatic field. As a storm develops the electrostatic field will change. The sensor collects the energy from the atmosphere, changes in the field and the computer calculates " real time" data to determine the **current** Lightning Hazard Level.

WHAT IS THE "ELECTROSTATIC FIELD"?

A natural component of the earth's structure is the electrical charge in the atmosphere envelope and in the earth itself. This is D. C. (direct current) electricity and it has positive and negative polarity. It varies in its intensity and the positive and negative charges move about from place to place constantly.

HOW DOES THOR GUARD "MONITOR" THE ELECTROSTATIC FIELD ?

Thor Guard has developed a specialized sensor that will monitor the atmosphere which contains this field. Located outside, usually on a roof, the sensor is comprised of 4 silver domes and incorporates a hyper static plate. A special tri-axial cable connects the sensor to the Thor Guard Computer.

HOW IS THE ATMOSPHERIC INFORMATION USED BY THOR GUARD?

The Thor Guard computer is programmed to evaluate the data by comparison, historical information within its memory. The electrical function of a thunderstorm is rhythmic and repetitive. Therefore, the patterns of electrical intensification, both polarity changes and energy migration, provide Thor Guard the information it needs to make a prediction of the potential for a lightning discharge in the area it is monitoring.

Thor Guard coverage area has a radius of 2.5 miles for lightning discharge. However, the data that is used by Thor Guard can be adjusted to a maximum range of 15 miles in radius. This will allow for adjustments to the time of notification of a hazard.

CAN'T WE WATCH A STORM USING OUR EYES AND TELL WHEN THERE IS A HAZARD?

You can see the lightning and count the seconds till you hear the thunder, but that only tells you there was a **visible** lightning strike and maybe about how far away it was. It does not tell you the chance of lightning striking at your location. Thor Guards technology utilizes the electricity in the air to determine **your** lightning hazard level. It is possible to have a lightning hazard and not have a **visible** lightning strike.

USING THOR GUARD HOW MUCH ADVANCE WARNING DO YOU GET?

Thor Guard provides **real time** data, which is then used to evaluate the electrostatic field. The information received from the sensor is updated 50 times a second. The Thor Guard system has been designed to allow various sensitivity levels. This allows the user, based on their needs and geographical location, to select the time before a lightning hazard warning is given. Typical times will be between 8 and 20 minutes. Thor Guard can monitor a range up to a maximum of 15 miles in radius.

WHAT ARE THE THREE WARNING LEVELS OF POTENTIAL ELECTRICAL ACTIVITY?

Thor Guard has several systems to provide information as required by the user. All systems will indicate an All Clear, Caution, Warning, or Red Alert.

The All Clear would advise that there is no hazard in the area being monitored.

The Caution will bring attention that energy migration is occurring. This could be the result of a storm at a distance that has begun to move in to the area Thor Guard is concerned with. However, normal changes that occur in the atmosphere without energy exchanges can cause this. Thor Guard will attempt to return to the All Clear or advance to a hazard Warning level.

When Thor Guard is at a Warning level, there is electrical activity within the selected area. The user may now want to look at the LHL & DI values, as these values will change with the activity in the atmosphere. The Warning indicates that there may be a strike, or perhaps you may see lightning, but there is less than a 30% chance it will happen within your concerned area.

Red Alert indicates that there is at least 30% probability of a lightning discharge in your area. This is a fixed level that Thor Guard uses when determining lightning hazard levels. The Red Alert hazard should be taken seriously. As the storm begins to intensify in the area being monitored, the Dynamic Index (DI), will increase. This number represents the chance of a discharge within the immediate area (2.5 mile radius). As a storm passes through, this number will decrease.

If your facility is equipped with a VOT Alarm System, the alarm horns will sound with one 15 second blast indicating a hazard.

WHEN IS THE AREA SAFE, DO I WAIT FOR THE HORNS TO SOUND?

Thor Guard has a feature called an "activity detector" (AD). Depending on the storm, this value will indicate the amount of minutes before Thor Guard has determined the area to be safe. While you may not see lightning discharges the area may still maintain the energy that could allow a lightning discharge to occur. When Thor Guard determines the energy has dissipated and the AD returns to zero the All Clear signal will be sent. If equipped with, the horns will sound 3 short separated blasts.

Those users with VOT Alarm Systems can determine the time of day the horns will sound. To insure your complete safety, the facility should determine the hours for the Alarm System to be active. The threat of a storm may still be present during the time that the horns are selected to be inactive.

"LIGHTNING PREDICTION" OR "LIGHTNING DETECTION"?

Lightning "detection" systems detect the electromagnetic signatures that are the by-product of actual lightning strikes. Lightning "prediction" (the method Thor Guard utilizes), senses and evaluates the shifts and changes in the electrostatic field that precede the occurrence of an actual lightning strike. **Thor Guards method ensures the first strike will not be within the area you are monitoring.**

If you have selected Thor Guard to replace an existing lightning "detection" system, you will definitely notice a difference in performance. The chance of **false alerts** will diminish with a Thor Guard system. You may see a lightning discharge in the distance, but with Thor Guard, you will know whether there is a true threat to you.

WHAT FACILITIES USE THOR GUARD?

Thor Guard systems have been in use since 1976. Thor Guard is the system used exclusively by the PGA Tour, Senior Tour, LPGA Tour, PGA Championships, the USGA and was the system chosen by the 1996 Atlanta Olympic Venues. Thor Guard is the system used by all of the Tournament Player Clubs (TPC).

Thor Guard systems are used by city governments, fire departments, park districts and schools to give lightning hazard information and provide a public-notification program.

Theme Parks located throughout the United States incorporate Thor Guard as part of their safety program. Amusement rides are stopped until the lightning hazard diminishes and is no longer a threat.

Government facilities use Thor Guard to insure a safe environment for various parts of the military.

Corporate companies such as AT&T, ALCOA, MOTOROLA and others have implemented Thor Guard for personal and facility safety.

Thor Guard is used by private individuals to protect their own property and equipment in the event of lightning hazard.



2701 Sibley Avenue
Park Ridge, Illinois 60068
(847) 692-5127
Fax: (847) 318-6808

Mr. Robert Dugan
THOR GUARD, Inc.
1193 Sawgrass Corporate Parkway
Sunrise, FL 33323

Dear Bob:

As you know, a popular Park Ridge student and soccer referee was killed by a rogue lightning strike in 1996. The lightning struck Scott ten minutes after the storm had passed. At the time, the strike was described as "rogue" because weather experts indicated that such strikes were rare and not likely to reoccur.

The Park Ridge Park District researched the lightning warning product marketplace and decided to purchase THOR GUARD on the strength of your customers' success with the system.

The evening of our dedication ceremony, exactly one year to the day of Scott's tragic death, the Voice of THOR at Hinkley Field sounded with no indication of severe weather anywhere. As you and Chicago are now well aware, ten minutes after the warning sounded and the fields cleared, another rogue strike struck the field, a first strike from ten or more miles away. This time no one was injured! Had we not installed THOR GUARD, someone would have been killed or injured.

Park Ridge now has several years' use of THOR under its belt, and we are grateful to your very supportive customers for directing us to your company. Your personnel have been helpful every step of the way and our community is a safer place to live and play because THOR GUARD is a daily part of our lives.

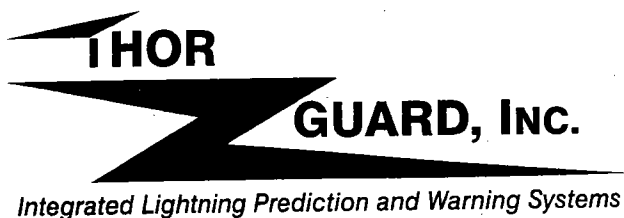
Bob, again, thank you for playing an important role in our past, present and future.

Sincerely,

PARK RIDGE RECREATION AND PARK DISTRICT

Steven K. Meyer, Director

SKM:js



Walt Wynarczyk
Territory Manager

25020 Vermette Rd.
Plainfield, IL 60544

Tel: (815) 254-3526
Cell: (708) 989-8273

LOCAL CUSTOMER LIST

Chicago District Golf Assoc.
Ravisloe CC
Balmoral GC
Olympia Fields CC
Butler National GC
Naperville CC
Ruth Lake CC
North Shore CC
Lake Shore CC
Briarwood CC
Inverness CC
Thunderbird CC
Hillcrest CC
Evanston CC
Old Elm Club Wis. Air Nat. Guard
Caterpillar
Danville CC
Quantum Chemical Co.
State Farm Ins.
Vernon Hills Township
Valley Lo Sports Club
Calumet CC
Aurora CC
Blackhawk CC WI
Bartlett Pool
Wilmette GC
Munster, IN School District
Prospect HS
Chicago Golf Club
Freeport Park District (4)
Barrington (7)
Naperville Park District (4)
Deerfield HS
Palatine HS
Village of North Riverside
Whisper Creek, Del Webb
Crystal Woods GC
Glenbrook North HS
Lake Forest HS
Glen Ellyn Park Dist. (2)
Warren Township Center
Lincolnshire Fields CC
Woodland CC Carmel, IN
Streamwood Park Dist.(2)
Frankfort Park Dist.(2)
Midlothian CC
Peotone Park Dist.
Lawsonia G C
Mokena Park Dist.
Tournament Club of Iowa
Rockford Park District (2)
Village of Carol Stream
Village of Lincolnwood
Countryside Lake
Newark Park Dist.

Hinsdale CC
City of Park Ridge
Orland Park (4)
Norridge (2)
Glenco GC
Thunderhawk GC
Aurora Emg. Mngt.
Independence Grove, LCFPD
Bryn Mawr CC
Oak Park
Randall Oaks GC
Ridgewood HS
Hoffer Plastics
Westmoreland CC
Countryside GC
Brae Loch GC
Poplar Creek GC
Deerfield Park Dist. GC
Exmoor CC
Lincoln-Way HS District (3)
Springbrook GC
Glen Flora CC
Lincolnshire Park District
Libertyville Soccer
City of Munster, IN
Springfield, City W.L.&P.
Mantino GC
Hoffman Estates HS
Riverside CC
Horse Shoe Bay CC WI
Lake Geneva CC WI
Park Ridge CC
Schaumburg HS
Fremd HS
Hickory Hills Park Dist. (2)
TPC Deer Run
East Side Center, E. Peoria
Glenbrook South HS
New Trier HS Dist. 203 (2)
Elk Grove Village (4)
Crystal Lake CC
Oregon Park Dist.
Point O' Woods CC MI
Crystal Lake Park Dist.
Bartlett Little League West
Lake Bluff GC
Tamarak Day Camp
Wheeling Pk. Dist. Chevy Chase
La Grange CC
Northlake Fire Protection Dist.
Rockford CC
Village of Vernon Hills
Niles Park District (2)
Kenilworth Park Dist.
Schererville, IN Park Dist. (2)

Apple Orchard GC
Onwentsia CC
Shore Acres CC
Lincolnshire Marriott
Bigfoot CC
Grand Geneva GC
Conway Farms GC
Glenview Park Dist (3)
Winnetka Park District (2)
Medinah CC
Royal Fox CC
Orchard Valley GC
Rich Harvest Farms
The Merit Club
Ravinia Green CC
Rolling Green CC
Bartlett Hills GC
Niles HS District (2)
John Deere Corp.
Edgewood Valley CC
Naperbrook GC
Village of River Forest
Westchester Park District
Edison Park
UPS-O'Hare
Waukegan Harbor
Deerpath GC
Carol Stream Park District (2)
Lisle Park District
Bartlett Little League
City of Yorkville
Highland Park HS
Conant HS
North Shore Country Day School
Rosemont Park District
Oak Brook Golf Club
Oak Brook Park District
H.S. Dist. 214 (8)
Libertyville, City of (3)
Deerfield Park Dist. (2)
Des Plaines Park Dist. (6)
Benedictine University
St. Charles Park Dist. (2)
Peotone Park Dist.
Brook Hill GC
Beech Coal & Mining
Oak Lawn Com. HS (2)
Woodmar CC
Rockford CC
Arlington Heights Park Dist (2)
Winfield Park District
Gurnee Park District (2)
Elk Grove Township (2)
River Forest CC