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| **From:** | Jacob Johnson |
| **Sent:** | Friday, January 18, 2019 3:20 PM |
| **To:** | Joe Snook |
| **Cc:** | Heath Harris |
| **Subject:** | Follow-up Weather Research |
| **Attachments:** | Follow-up research 1.18.19.docx; NG Thor Guard vs EN Comparison.xlsx |

Joe,

Attached is our follow-up information from our presentation on Monday. You will find the information broken down in the following order:

1.     EarthNetworks additional information
2.     ThorGuard additional information
3.     Weather or Not information
4.     Presentation possibilities from each organization
5.     Cold Weather Policy research.

*Based on the ranges we were able to find regarding cold weather, what we have in the policy, and what was expressed at the last meeting we would recommend making the following adjustments to the cold weather policy:

•     Temperature with wind chill is 15*F or Below, Games will be cancelled or moved indoors if possible.

Per Heath:

    Earth Networks also shared a study done over a Louisiana airport who has ThorGuard and compared it to Earth Networks (Weather Bug at the time). The representative from Earth Networks did not specify who completed this study and where the data came from. He was also very hesitant to share the file with me, but said he would if I kept it confidential. I told him only myself, a colleague and our Administrator would see it. Jacob and I thought it would be something you would like to take a look at but did not want to include this in the YSA update because of the confidentiality of the document and we do not know the credibility behind the findings. This document is the excel sheet that is attached.

A print out of Both documents will be in your mailbox at City Hall along with this email. If you have any questions please let us know.

Best Regards,

**Jacob Johnson, CYSA** | Recreation Supervisor I
110 SW Blue Parkway | Lee's Summit, MO  64063
Phone: 816.969.1544  |  Cell: 816.875.0342|   fax: 816.969.1543  |  www.lsparks.net

# EarthNetwork

Installation Details:

- We must prepare site.
  - Provide wiring to alert system.
  - Internet connection cable
  - Concrete and pole set if needed
- Alert systems are installed on buildings 90% of the time.
  - Could mount on light poles or other utility poles if needed.
  - Earth Networks would send installation team to determine recommended mounting areas.
  - Earth Networks recommends mounting the alert systems on top of buildings so the strobe and sound of the horn can be seen and heard at a longer distance.
- Multiple secondary horns can connect to 1 primary horn.
  - Earth Networks said a horn at each venue connected to primary horn at LPCC is an option. ~~what about Strobe~~
  - If only one secondary horn was purchased and each venue wants a strobe, each strobe would require internet connection and would have to purchase additional equipment for each strobe to sync signal.
    - (I do not have the estimated cost at this time)
- The alert system itself ranges from 8ft to 10ft tall.
  - Depends on mounting location
  - Primary horn will be taller with the antenna- to send signals to secondary horns.

Number of contacts for alert notifications:

- "100's and 100's" of contacts can be added to receive notifications.
- We would control who is on the contact list.
  - We can add/remove contacts at any time.
  - We can set who receives notifications from a location
  - We do not need to notify Earth Networks of changes to contact list.
- There are 89 different variables we can monitor
  - Lightning, Tornado, Heat, Cold, Heat Index, Wet Bulb, Wind direction, etc.

Adding Locations:

- Whoever has a login for the system can add/remove additional locations.
  - Enter the address of location or latitude and longitude.

- o Earth Networks recommends Coaches work together on multiple locations within a mile of each other.
    - If Earth Networks are monitoring 2 parks within 1 mile of each other their readings may overlap and send alerts to both parks when a lightning strike is with the set radius of 1 park.
- Countdown clock is only available for venue where outdoor alert system is installed (Legacy Park)
    - o Text/Email alerts are still available for additional locations.
    - o All clear notifications available as well.
    - o Earth Networks is currently researching into adding a countdown clock in the future.

Thunder and In Cloud Lightning:

- Earth Network's system does not detect thunder.
- System does detect in cloud lightning.
    - o In cloud lightning show up as purple on radar.
    - o Cloud to ground lightning show up as yellow on radar.
- Determines positive and negative charged lightning strikes
    - o Positive appears as "+" on radar
        - Stronger strikes and travel further from storm
            - Out of the Blue strikes
    - o Negative appears as "-" on radar
        - Weaker strikes and most common.

Countdown Clock on Website:

- Countdown clock can be linked to 1 website.
    - o A Link with URL for countdown clock can be posted on each YSA website and would direct patrons to countdown clock on our website.
    - o Earth Networks recommended not posting radar on our website.

# ThorGuard vs Earth Networks

## ThorGuard

**Services:** On-site Monitor and alert system, Software that provides radar for your area.

### Pros

- Takes decision out of department/ organizations hands
- Can now monitor WetBulbGlobe Temperature
- Staff is easily reach and very helpful
- Will give an all clear which can eliminate extended closures.

### Cons

- Billed as a prevention system. Looks at a very specific element of a storm and the atmosphere to determine alert.
- Can go off even if there is not a storm directly overhead/no sign of threat.
- Cost

**Cost:** Initial investment - $22,750
Ongoing Maintenance - $3,500 per year

## EarthNetworks

**Services:** On-site Monitor and alert system for lighting, Software that provides radar for your area. Can designate multiple locations to be monitored by their network. Can set multiple contacts for specific areas to be alerted by email/messaging. Also provides a meteorological service.

### Pros

- Takes decision out of department/ organizations hands
- Can monitor WetBulbGlobe Temperature
- Staff is easily reach and very helpful
- Can monitor all aspects such as Heat, Cold, High Winds, Lightning.
- Extensive sensors and weather station network provide a commercial grade radar and forecast.
- Specific forecast will be sent to your organization depending upon the service along with updates if changes
- Keeps data on file to view where strikes have occurred and at what time.

### Cons

- You can experience delays if the alert continues to go off for a storm on the edge of your radius or if you have to monitored locations in close proximity to one another.
- Cost

**Cost:** Initial investment - $17,500
Ongoing Cost - $1,500 per year

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