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*Application for DHS Stadium  
Lighting Project  
(Project Narrative)*

**The Board of Education**  
*October, 2016*

<b>Abstract</b>	
	The Board of Education charged Central Administration to present to them a proposal regarding the installation of lights on the Darien High School Campus. Administration has reviewed the history of past proposals, met with: Town Officials, Planning and Zoning, School Administrators, Youth Athletic Leaders, Leadership of the Darien Athletic Foundation and Darien residents who are neighbors to the high school property. This application represents recommendations based on that input and the benefits lights would bring to the school/community.

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## **1. Introduction**

### **1.1. Background**

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There have been many discussions around the feasibility of lights on the DHS campus dating back to 1980. In the recent past the Board of Education submitted an application to Darien Planning and Zoning Board for consideration of lights in 2008. The application included recommended regulations as well as a request for a special permit. P & Z conducted a mandatory referral review and found that the proposal was not consistent with the Town Plan of Conservation and Development. As a result, the proposal was withdrawn by the Board of Education.

In November of 2008 the Board of Education applied for temporary lighting for the Stadium Field. Six generator powered lighting units were put in place. Limited use was granted for both DHS and DJFL. Use of the lights was permitted on weeknights until 7pm.

In November of 2009 six portable "plug-in" lights were approved for practices only at the Stadium Field. 20 foot poles were used and a 7pm curfew was imposed. Additionally, screening was hung over DHS windows facing the property line to prevent light glare shining onto the neighbors' property.

For the Fall of 2010 and 2011 lights were approved through the DHS football season. In 2012 Planning and Zoning approved the height of the light poles to be 30 feet. In September of 2013 the lights were approved through 2017.

This current application is the culmination of several public presentations made to the Board of Education during the past school year. At that time community input was solicited through invitations via the mail to the neighbors of the DHS property, meetings with a number of neighbors at central office, a significant amount of conversations through email with community members and the central administration as well as community discussions at BOE meetings.

### **1.2. Project Description**

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The proposed project is for the installation of four (4) 80 foot poles to be installed on either side of the DHS Stadium Field. Appendix 4.1 is an illustration of the poles that are being recommended. They are a Musco LED lighting system designed to maximize the illumination on the field while at the same time minimizing the "spillage" beyond the actual playing field. Appendices 4.2 & 4.3 are schematics indicating the illumination levels of the lights with candle power illustrated. Additionally, the embedded link gives a comprehensive look at what can be expected given the new technology of LED

lights.

[https://www.youtube.com/watch?v=2fnggMwwBYM&list=PL\\_2f4rk\\_gm-AzmIevwmxywrSuxV1dzkOP](https://www.youtube.com/watch?v=2fnggMwwBYM&list=PL_2f4rk_gm-AzmIevwmxywrSuxV1dzkOP)

There will also be a new balanced sound system that will be installed at the Stadium Field. The goal of the system is to increase the quality of sound during games while at the same time minimizing the sound that reverberates off-site. This will be accomplished by strategically placing an increased number of speakers (six to eight) around the Stadium Field allowing for better sound quality while utilizing lower volume.

It is being recommended that an evergreen tree barrier be planted and maintained between the property line beginning in the left field of the JV baseball field and extending to foul pole in right field of the varsity baseball field. (See Screening Planting Plan enclosed.) The impact of this natural barrier will reduce "the landing strip" effect that has been a concern of several neighbors.

Finally, there is agreement between the Board of Education and certain neighbors not to request additional field lighting on any of its properties for at least the next five years. The essential components of this agreement are attached as Appendix 4.5, entitled "Proposed Conditions." The BOE respectfully requests that the Commission consider providing these as "conditions of approval" if the Commission, within its discretion, determines to approve the subject site plan/special permit application.

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## **2. PROJECT DETAILS**

### **2.1. Who May Use the Field**

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The lights are being installed first and foremost for the use of Darien High School student/athletes. Historically the lights have been used by the Darien Junior Football League after DHS teams have finished practicing. The goal is to maintain the existing arrangement whereby certain youth athletics practices will have access to the field lights as time permits. Limitations of who may use the field include:

- Only DHS sports and Darien non-profit youth sports organizations will be permitted.
- Only youth practices will be allowed under the lights in the fall. No youth practices will be permitted in the spring under the lights.
- No youth games will be allowed.
- No adult league play.
- DHS athletic teams must be participating in all contests played under the lights.
- Only DHS Varsity games will be played under the lights.

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## 2.2. When Will the Field be in Use

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The rationale for when games can be played are based on high school usage beginning in the fall and extending until school closes in the spring. The understanding is that the greatest impact will be during the late fall when daylight savings time becomes a factor. However, there is an acknowledgement of the positive cultural impact Friday night games will have as a "community event" during the fall season. The guidelines for when games can be played follow:

- Lights will remain off on Saturdays and Sundays with the exception of FCIAC playoff or championship games.
- Practices and other activities will be on Monday through Friday with lights off by 7:30pm. This represents a compromise position with the neighbors who originally wanted 7:00pm while the District proposed 8pm.
- The compromise further involved an agreement that in the event DHS games that were appropriately scheduled to start by 4:00 p.m. (game one) and 5:30 (game two) and end by 7:30 pm, but could not finish within the prescribed 7:30pm time period, allowances will be made for the completion of the game regardless of the hour of completion. (It is understood that this will be an infrequent but necessary modification to allow games to be completed. Reasons for extending games could include but are not limited to a visiting team arriving late to the game or a game going into overtime).
- Lights will remain off: (a) from the end of the CIAC fall season until the beginning of the CIAC spring season; and (b) from the end of the CIAC spring season to the beginning of the CIAC fall season.
- Friday night games can extend until 10pm. Each Varsity team will have the opportunity to play no more than two games per season on a Friday night exclusive of mandated playoff games.

## 2.3. How Many Evening Games

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As stated previously, in an effort to give each Varsity team an opportunity to play under the lights, each Varsity team will be assigned two regular game dates. In the fall that includes boys' and girls' soccer, field hockey and football. In the spring it includes boys' and girls' lacrosse, although daylight is typically not an issue in the spring. With each team receiving two games that would equal a total of 12 "night games." Additionally, examining a three year

historical view of the number of playoff games that could have been hosted had we had lights, we find it would have been 4 in 2013, 4 in 2014 and 7 last year (2016). Adding those numbers to the 12 games per year and we would fall between 16 and 19 games total with the average being 17. This suggests that each team will play both of their Friday night games, which may not be the case.

### 3.0 Project monitoring

Management, control and coordination of the fields and the associated lights and sound system shall remain the sole responsibility of the BOE administration. Security and traffic control based on usage of the fields will be coordinated by administration in collaboration with the Darien Police Department. Clean up of school property after night events will be under the control of the DPS facilities department and will be done so in a timely manner to minimize the impact on the surrounding neighbors. The expectation is that cleanup will occur the evening of the event and continue again the following morning.

A compliance committee will be formed at the outset of each fall season, chaired by the Director of Facilities and including not more than two DHS neighbors chosen by abutting neighbors from the North and East sides of the DHS property, to review issues of non-compliance that are registered by community members and any other concerns that may arise. The compliance committee may make recommendations to DHS concerning alleged non-compliance or impacts associated with the approved permanent lighting facilities and new balance sound or PA system. The compliance committee shall be advisory only and will meet at least one time per year or as needed to ensure compliance with any approved conditions.

### 3.1. Expenses

In the accompanying table please find an outline of approximate expenses for this project.

project	Estimated cost	Source
Installed lights	\$597,743	DAF
Installed Audio	\$65,000	DAF
Screening	\$20,000	BOE

The Darien Athletic Foundation has agreed to raise the funds to complete the lighting and sound projects. This is inclusive of the costs of all of the materials and the full installation. The project will not commence until all funds have been raised and accounted for.

The natural screening is a cost that will be assumed by the Board of Education.

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## 3.2. Lighting Specifications

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The lights are a MUSCO product. The actual specifications include:

### Equipment Description

Light-Structure Green™ in 5 Easy Pieces™ – complete from foundation to poletop

- (4) Pre-cast concrete bases with integrated grounding
- (4) 80' Galvanized steel poles
- Remote electrical component enclosures
- Pole length wire harnesses
- Factory-aimed and assembled luminaries

### Control System

- Control-Link® System for remote on/off control and performance monitoring with 24/7 customer support

### Benefits of Light-Structure Green™

- Reduction of energy and maintenance costs by 50% to 85% over typical 1500w HID equipment
  - Reduction of spill light and glare by 50% or more
  - Guaranteed light levels of 50 Footcandles on the Multi-Purpose Field
  - Unmatched product assurance and warranty program that includes materials and onsite labor, eliminating 100% of your maintenance costs for 10 years
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## 3.3. Audio Specifications

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In order to provide the best possible experience for spectators a state of the art audio system has been designed for the Stadium field. As stated earlier, the goal is to provide the highest quality audio experience with the least volume needed to achieve the goal. The accompanying map (Appendix 4.4) shows the levels of sound on the field and surrounding areas. The PA system

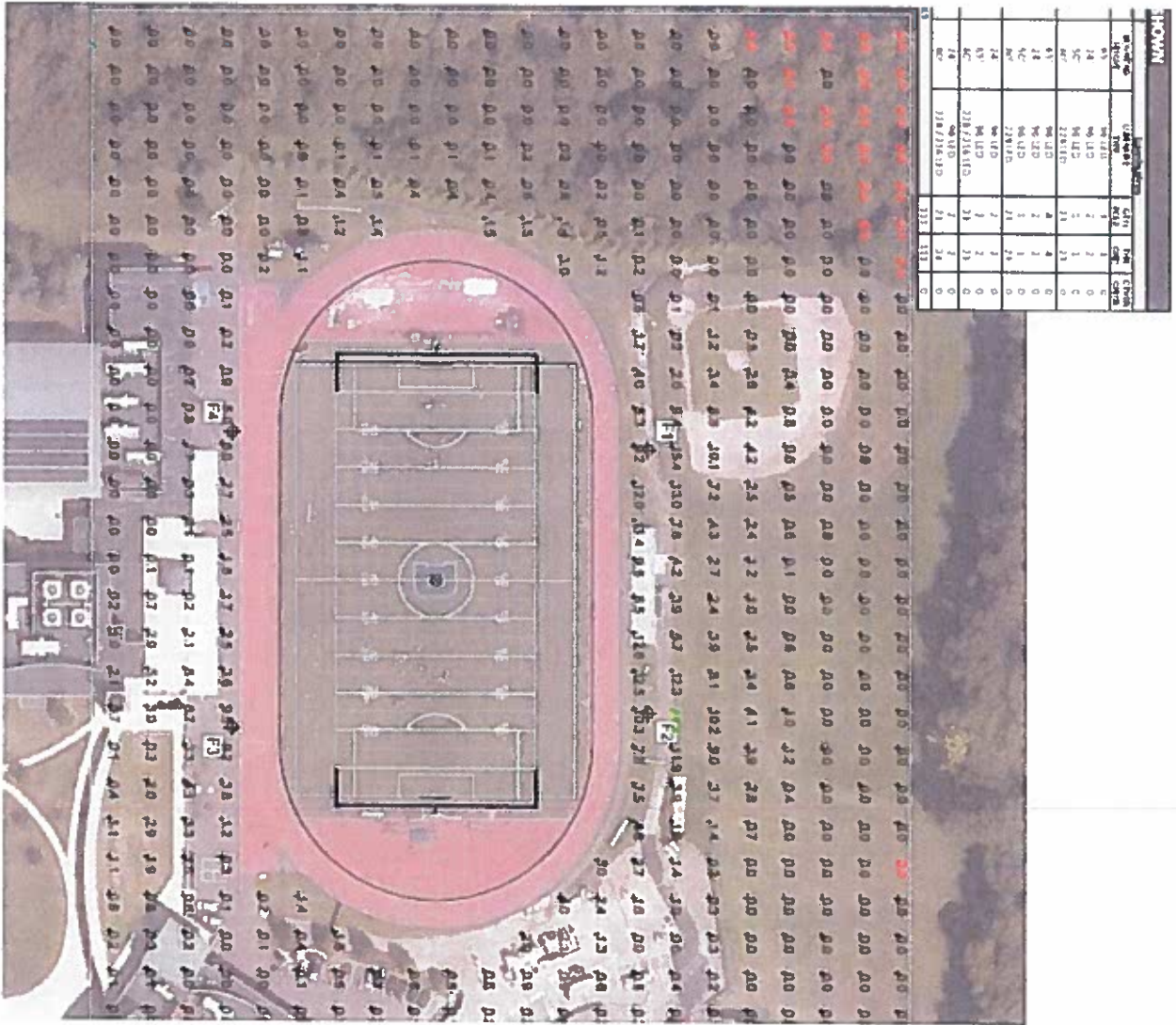
is designed to perform within these levels. The controller for the sound system will be housed in the press box. It will have a digital password which will limit access to non-authorized users, minimizing the opportunity for misuse. The password, which can be changed on site if necessary, will be in the control of the Athletic Director and the Director of Facilities. Users will be assigned at their sole discretion.

The sound requirements will mirror what currently exists. The PA system will be permitted to be used only during DHS games. Music over the PA system is allowable only prior to DHS games. Music is not allowable during practices. Music from the High School band incidental to the game (e.g., musical cheer on scoring), will be allowable throughout the entirety of all DHS Varsity games. However a performance by a DHS marching band (in the event that a marching band was formed in the future) would be limited to half time and/or prior to the game. Similar to the current DHS band, a marching band could play throughout the game from the bleachers. All band practice would be limited to daytime hours. Operation of the PA system will comply with the sound pressure levels as presented by the applicant and depicted on Appendix 4.4: "Sound Pressure Levels."



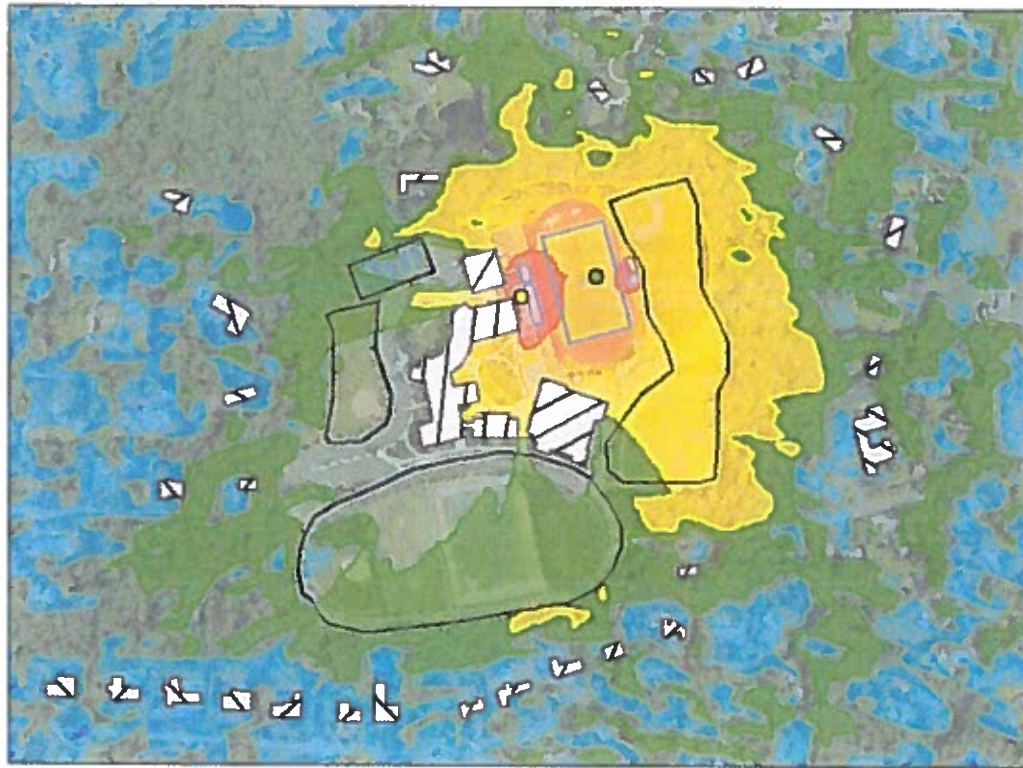


## 4.2. Appendix: Surrounding Property Light Spillage





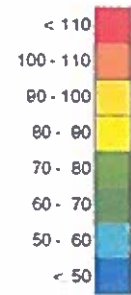
## 4.4. Appendix: Sound Pressure Levels



### Representative Sound Pressure Levels

- < 110 Jet Takeoff 200 ft away
- 110 Rock Band
- 100 Gas Lawn Mower 3 ft away
- 90 Boiler Room
- 80 Heavy Truck 50 ft away
- 70 Normal Speech 3 ft away
- 60 Large Business Office
- 50 Light Traffic 100 ft away

### Levels in dBA



DARIEN HIGH SCHOOL  
Football Field Audio System  
Environmental Noise Study

Scale 1:2500 Date 05/17/18

**a'ku-stiks**  
Engineering and Acoustics  
1000 West 10th Street  
Chicago, IL 60608  
www.a-kustiks.com

## 4.5 Appendix: Proposed Conditions

### I. Overall Project:

- A. Limited to Four (4) 80 foot poles to be installed on either side of the DHS Stadium Field, as depicted on the approved plans.
- B. Limited to the new balanced audio or sound system, as proposed.
- C. Provide for an Evergreen tree barrier to be planted and maintained between the property line beginning in the left field of the JV baseball field and extending to the foul pole in right field of the varsity baseball field, as depicted on the approved plans.

### II. Proposed Conditions of Approval for Lighting Facilities Plan:

#### A. Field Use When Lighting Facilities in Use:

- i. Only DHS sports and Darien non-profit youth sports organizations will be permitted.
- ii. Youth practices will be allowed under the lights in the fall. No youth practices will be permitted in the spring under the lights.
- iii. No youth games will be allowed.
- iv. No adult league play.
- v. DHS athletic teams must be participating in all contests played under the lights.
- vi. Only DHS Varsity games will be played under the lights.

#### B. Time Limitations for Lighting Facilities:

- i. Lights will remain off on Saturdays and Sundays with the exception of FCIAC playoff or championship games.
- ii. Practices and other activities will be on Monday through Friday with lights off by 7:30 pm.
- iii. In the event DHS games that were appropriately scheduled to start by 4:00 p.m. (game one) and 5:30 (game two) and end by 7:30 p.m., but could not finish within the prescribed 7:30 pm time period, allowances will be made for the completion of the game regardless of the hour of completion.

- iv. Lights will remain off: (a) from the end of the CIAC fall season until the beginning of the CIAC spring season; and (b) from the end of the CIAC spring season to the beginning of the CIAC fall season.
- v. Friday night games can extend until 10 pm. Each Varsity team will have the opportunity to play no more than two games per season on a Friday night exclusive of mandated playoff games.

C. Evening Games:

- i. Each Varsity team will be assigned 2 regular game dates. In the fall that includes boys' and girls' soccer, field hockey and football. In the spring it includes boys' and girls' lacrosse. With each team receiving two games this totals 12 "night games."
- ii. In addition to the 12 regular night games, playoff games are estimated to add an average of an additional 5 games per year, and are permitted during the evening.

D. Lighting Facilities Limited to Football Stadium:

- i. No other field at the DHS property may be lit or illuminated for evening athletic or other activities.

III. Proposed Conditions for New Balanced Sound System:

A. Audio Specifications:

- i. The PA system will be permitted to be used only during DHS games. Music over the PA system is allowable only prior to DHS games. Music is not allowable during practices. Music from the High School band incidental to the game (e.g., musical cheer on scoring), will be allowable throughout the entirety of all DHS Varsity games. However, a performance by a DHS marching band (in the event that a marching band was formed in the future) would be limited to half time and/or prior to the game. Similar to the current DHS band, a marching band could play throughout the game from the bleachers. All band practice would be limited to daytime hours.
- ii. Operation of the PA system must comply with the sound pressure levels as presented by the applicant and depicted on Exhibit A-1 attached hereto, which is Appendix 4.4: "Sound Pressure Levels" in applicant's application material.

IV. Project Monitoring:

- i. A compliance committee will be formed at the outset of each fall season, chaired by the Director of Facilities and including not more than two DHS neighbors chosen by abutting neighbors from the North and East sides of the DHS property, to review issues of non-compliance that are registered by community members and any other concerns that may arise. The compliance committee may make recommendations to DHS concerning alleged non-compliance or impacts associated with the approved permanent lighting facilities and new balance sound or PA system. The compliance committee shall be advisory only and will meet at least one time per year or as needed to ensure compliance with any approval conditions.

V. Timeframe:

The conditions provided in this Exhibit A shall apply to the approved permanent lighting facility and PA system for a period of five (5) years from the effective date of this approval. During this five (5) year time period, the Darien Board of Education ("BOE") agrees not to submit, nor consent to the submission of, any application to the Planning and Zoning Commission seeking to modify any condition contained herein that would be less or more restrictive unless such modification is required to comply with any law, or approval to install, construct or use permanent or temporary lighting facilities or an upgraded PA system at any other field, including a track, located on the DHS property, or any other BOE property. After such five (5) year time period, the conditions contained herein shall remain in effect, unless BOE files an application with the Planning and Zoning Commission seeking: (a) approval to modify, change or eliminate any condition contained herein; or (b) approval for any new or upgraded permanent or temporary lighting facilities or PA systems on the DHS property or any other BOE property.