

**FORMAL COMPLAINT**

**Before the Illinois Pollution Control Board**

Marek Kruk )

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)

)

[Insert your name(s) in the space above] )

Complainant(s), )

)

v. )

New Trier High School )

)

)

)

[Insert name(s) of alleged polluter(s) in the space above] )

)

Respondent(s) )

**RECEIVED**  
CLERKS OFFICE

**AUG 23 2019**

**STATE OF ILLINOIS**  
**Pollution Control Board**

PCB 20 -

[For Board use only]

**Note to the Complainant:** If you do not use this Formal Complaint form and instead draft and type your own, it must contain all of the information requested by this form. All items must be completed. If there is insufficient space to complete any item, you may attach additional sheets, specifying the number of the item you are completing. Once you have completed the Formal Complaint, the Notice of Filing, and the Documentation of Service, you must "file" these three documents with the Clerk of the Board and "serve" a copy of each document on each respondent. Specific requirements for the filing, service, and contents of these documents are set forth in the Board's procedural rules (35 Ill. Adm. Code 101, 103) and addressed in the explanatory materials accompanying this form.

1. Your Contact Information

Name: Marek Kruk  
Street Address: 124 Woodland Ave  
County: Cook  
State: IL  
Phone Number: (630) 747-4287

2. Place where you can be contacted during normal business hours (if different from above)

Name:  
Street Address:  
County:  
State:  
Phone Number: ( ) -

3. Name and address of the respondent (alleged polluter)

Name: New Trier High School  
Street Address: 385 Winnetka Ave  
County: Cook  
State: IL  
Phone Number: (847) 446-7000

4. Describe the type of business or activity that you allege is causing or allowing pollution (e.g., manufacturing company, home repair shop) and give the address of the pollution source if different than the address above.

The main source of the noise pollution is New Trier High School's dust collector used for their wood shop. It is located on the school's campus at 385 Winnetka Ave, but the dust collector in question is in the west service dock facing the houses on Woodland Ave. The dust collector was placed in the newly built service dock in the fall of 2017 after a major renovation and has since been running every day of the week except Sunday. It runs Monday through Saturday between approximately 8:00 AM and 8:00 PM, sometimes for 4 or more hours continuously, multiple times per day. New Trier High School has also been scheduling after-school and summer wood shop activities which result in significant daily operation of the dust collector outside of normal school hours. The noise level emitted by the dust collector was measured in May and July of 2018 by Shiner Acoustics and was found to be in violation of EPA limits both times. The Shiner Acoustics report showing the measurements taken in front of our home is attached.

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Also, not covered by the Shiner Acoustics report, there is additional loud noise generating equipment located in the service dock that often runs concurrently with the above-mentioned dust collector. Namely, a newly installed backup generator which runs every Friday for approximately 30 minutes and is much louder than the dust collector.

Furthermore, two new trash compactors were also placed in the service dock. These compactors operate during the daytime and nighttime and make loud banging noises when solid objects are thrown into them and then crushed. They are emptied several times a day starting at 7:00 AM. When emptied, these large metal compactors are picked up and dropped onto the concrete floor which creates an extremely startling slamming noise.

Another loud piece of equipment in the service dock is the school's new condenser/compressor that runs 24/7. There are also several new electrical cabinets that were placed on Woodland Ave, rooftop units, and other ventilation fans that are always running. In a more recent development, sporadic liquid O<sub>2</sub> tank overpressure discharges are also adding to the daily noise.

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5. List specific sections of the Environmental Protection Act, Board regulations, Board order, or permit that you allege have been or are being violated.

Noise levels coming from the school's dust collector are above allowable limits. The standards are administered by the Pollution Control Board and are set in the Illinois Administrative Code, Title 35, Subtitle H, Chapter 1, Sections 901.102 (a) and (b). The dust collector was tested by Shiner Acoustics and was found to be in violation of Illinois daytime limits.

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6. Describe the type of pollution that you allege (e.g., air, odor, noise, water, sewer back-ups, hazardous waste) and the location of the alleged pollution. Be as specific as you reasonably can in describing the alleged pollution.

The dust collector emits a loud buzzing noise that creates strong vibrations felt in and around our home. We live across the street and the sound disturbs our family even when the windows and doors are closed.

The additional equipment adds banging, humming, and whirring noises to the already incessant buzzing from the dust collector.

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7. Describe the duration and frequency of the alleged pollution. Be as specific as you reasonably can about when you first noticed the alleged pollution, how frequently it occurs, and whether it is still continuing (include seasons of the year, dates, and times of day if known).

The dust collector can be heard at any time, Monday through Saturday, from 8:00 AM to 8:00 PM. The total run time averages in excess of 4 hours per day and began in the fall of 2017. The other loud equipment can be heard at any time.

8. Describe any bad effects that you believe the alleged pollution has or has had on human health, on plant or animal life, on the environment, on the enjoyment of life or property, or on any lawful business or activity.

All of my family members have been negatively affected by this noise. My job requires shift work, so I often have to get my sleep during the daytime. When the dust collector turns on, it wakes me up and leaves me mentally and physically exhausted. My wife is also experiencing headaches, anxiety, and chest pains. The noise causes frustration, aggravation, and stress for my entire family. Our enjoyment of life and property has diminished as we are unable to spend time outside when the dust collector is on, and we can't escape the noise vibrations while inside. There is also no relief from noise at night. The value of our home has significantly diminished as well. The dust collector and other noise generating equipment mentioned were installed after a major renovation to the school and were not present when we purchased our home.

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9. Describe the relief that you seek from the Board (e.g., an order requiring that the respondent stop polluting, take pollution abatement measures, perform a cleanup, reimburse cleanup costs, change its operation, or pay a civil penalty (note that the Board cannot order the respondent to pay your attorney fees or any out-of-pocket expenses that you incur by pursuing an enforcement action).

We would like the Board to ensure that New Trier High School stops deliberately violating the law by continuing to expose my family to this excessive and harmful noise. New Trier High School should recognize the negative effects of operating this equipment above allowable limits and should finally prioritize the safety and wellbeing of my family over their own convenience. We made our request to bring the noise to pre-renovation levels known to the superintendent and principal of New Trier High School in person and over email in the Fall of 2017. After our many complaints, Shiner Acoustics was hired by the school in May of 2018 to perform noise testing, and their report confirmed that the dust collector was violating EPA limits. Yet New Trier High School has continued to operate this equipment without addressing the issue or even warning us of the excessive noise levels. Moreover, the school did not provide us with a copy of the Shiner Acoustics report until Spring of 2019, even though we have been asking for it since the tests were done the year prior. By deliberately withholding this information, the school chose to extend our exposure to the excessive noise levels while nothing meaningful was done to protect my family. For example, in the Fall of 2018, the school told us about their intent to build a wall around the dust collector, which made us wait for the construction of the wall while the dust collector ran daily, but no progress has been made since that time. We would like to make sure that New Trier High School immediately and completely addresses these noise issues, closely monitors their noise pollution going forward, and respects EPA's laws and regulations.

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10. Identify any identical or substantially similar case you know of brought before the Board or in another forum against this respondent for the same alleged pollution (note that you need not include any complaints made to the Illinois Environmental Protection Agency or any unit of local government).

N/A

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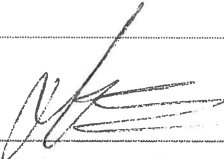
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11. State whether you are representing (a) yourself as an individual or (b) your unincorporated sole proprietorship. Also, state whether you are an attorney and, if so, whether you are licensed and registered to practice law in Illinois. (Under Illinois law, an association, citizens group, unit of local government, or corporation must be represented before the Board by an attorney. Also, an individual who is not an attorney cannot represent another individual or other individuals before the Board. However, an individual who is not an attorney is allowed to represent (a) himself or herself as an individual or (b) his or her unincorporated sole proprietorship, though the individual may prefer having attorney representation.)

I am representing myself as an individual and I am not an attorney.

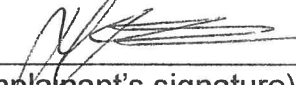
12.



(Complainant's signature)

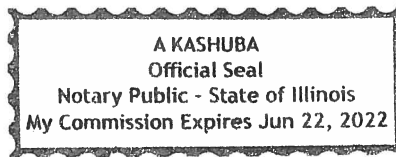
**CERTIFICATION**  
(optional but encouraged)


I, MAREK KRUK, on oath or affirmation, state that I have read the foregoing and that it is accurate to the best of my knowledge.

  
(Complainant's signature)

Subscribed to and sworn before me

this 14<sup>th</sup> day  
of August, 2019



  
Notary Public

My commission expires: June 22, 2022




**NOTICE OF FILING**

**Note to the Complainant:** This Notice of Filing must accompany the Formal Complaint and the Documentation of Service. Once you have completed the Notice of Filing, the Formal Complaint, and the Documentation of Service, you must file these three documents with the Board's Clerk *and* serve a copy of each document on each respondent.

Please take notice that today I, Marek Kruk \_\_\_\_\_, filed with the Clerk of the Illinois Pollution Control Board (Board) a Formal Complaint, a copy of which is served on you along with this Notice of Filing. You may be required to attend a hearing on a date set by the Board.

**Failure to file an answer to this complaint within 60 days may have severe consequences. Failure to answer will mean that all allegations in the complaint will be taken as if admitted for purposes of this proceeding. If you have any questions about this procedure, you should contact the hearing officer assigned to this proceeding, the Clerk's Office or an attorney. 35 Ill. Adm. Code 103.204(f).**

  
\_\_\_\_\_  
Complainant's signature

Street: 124 Woodland Ave \_\_\_\_\_

City, state, zip code: Winnetka, IL 60093 \_\_\_\_\_

Date: August 14, 2019 \_\_\_\_\_

**INFORMATION FOR RESPONDENT RECEIVING FORMAL COMPLAINT**

The following information has been prepared by the Board for general informational purposes only and does not constitute legal advice or substitute for the provisions of any statute, rule, or regulation. Information about the Formal Complaint process before the Board is found in the Environmental Protection Act (Act) (415 ILCS 5) and the Board's procedural rules (35 Ill. Adm. Code 101, 103). These can be accessed on the Board's website ([www.ipcb.state.il.us](http://www.ipcb.state.il.us)). The following is a summary of some of the most important points in the Act and the Board's procedural rules.

**Board Accepting Formal Complaint for Hearing: Motions**

The Board will not accept this Formal Complaint for hearing if the Board finds that it is either "duplicative" or "frivolous" within the meaning of Section 31(d)(1) of the Act (415 ILCS 5/31(d)(1)) and Section 101.202 of the Board's procedural rules (35 Ill. Adm. Code 101.202 (definitions of the terms "duplicative" and "frivolous")). "Duplicative" means the

complaint is identical or substantially similar to a case brought before the Board or another forum. See 35 Ill. Adm. Code 103.212(a) and item 10 of the Formal Complaint.

“Frivolous” means that the Formal Complaint seeks relief that the Board does not have the authority to grant or fails to state a cause of action upon which the Board can grant relief. For example, the Board has the authority to order a respondent to stop polluting and pay a civil penalty, to implement pollution abatement measures, or to perform a cleanup or reimburse cleanup costs. The Board does not have the authority, however, to award attorney fees to a citizen complainant. See 35 Ill. Adm. Code 103.212(a) and items 5 through 9 of the Formal Complaint.

If you believe that this Formal Complaint is duplicative or frivolous, you may file a motion with the Board, within 30 days after the date you received the complaint, requesting that the Board not accept the complaint for hearing. The motion must state the facts supporting your belief that the complaint is duplicative or frivolous. Memoranda, affidavits, and any other relevant documents may accompany the motion. See 35 Ill. Adm. Code 101.504, 103.212(b). If you need more than 30 days to file a motion alleging that the complaint is duplicative or frivolous, you must file a motion for an extension of time within 30 days after you received the complaint. A motion for an extension of time must state why you need more time and the amount of additional time you need. Timely filing a motion alleging that the Formal Complaint is duplicative or frivolous will stay the 60-day period for filing an Answer to the complaint. See 35 Ill. Adm. Code 103.204(e), 103.212(b); *see also* 35 Ill. Adm. Code 101.506 (generally, all motions to strike, dismiss, or challenge the sufficiency of any pleading must be filed within 30 days after service of the challenged document).

The party making a motion must “file” the motion with the Board’s Clerk and “serve” a copy of the motion on each of the other parties to the proceeding. The Board’s filing and service requirements are set forth in its procedural rules (35 Ill. Adm. Code 101.300, 101.302, 101.304), which are located on the Board’s website ([www.ipcb.state.il.us](http://www.ipcb.state.il.us)).

If you do not file a motion with the Board within 30 days after the date on which you received the Formal Complaint, the Board may find that the complaint is not duplicative or frivolous and accept the case for hearing without any input from you. The Board will then assign a hearing officer who will contact you to schedule times for holding telephone status conferences and a hearing. See 35 Ill. Adm. Code 103.212(a).

### **Answer to Complaint**

You have the right to file an Answer to this Formal Complaint within 60 days after you receive the complaint. If you timely file a motion alleging that the complaint is duplicative or frivolous, or a motion to strike, dismiss, or challenge the sufficiency of the complaint, then you may file an Answer within 60 days after the Board rules on your motion. See 35 Ill. Adm. Code 101.506, 103.204(d), (e), 103.212(b).

Failing to file an Answer to the Formal Complaint within 60 days after you were served with the complaint may have severe consequences. Failure to timely file an Answer will mean that all allegations in the Formal Complaint will be taken as if you admitted them for purposes of this proceeding. If you have any questions about this procedure, you should contact the hearing officer assigned to this proceeding, the Clerk's Office, or an attorney. See 35 Ill. Adm. Code 103.204(f).

### **Necessity of an Attorney**

Under Illinois law, an association, citizens group, unit of local government, or corporation must be represented before the Board by an attorney. In addition, an individual who is not an attorney cannot represent another individual or other individuals before the Board. However, even if an individual is not an attorney, he or she is allowed to represent (1) himself or herself as an individual or (2) his or her unincorporated sole proprietorship. See 35 Ill. Adm. Code 101.400(a). Such an individual may nevertheless wish to have an attorney prepare an Answer and any motions or briefs, and present a defense at hearing.

### **Costs**

In defending against this Formal Complaint, you are responsible for your attorney fees, duplicating charges, travel expenses, witness fees, and any other costs that you or your attorney may incur. The Board requires no filing fee to file with the Board your Answer or any other document in the enforcement proceeding. The Board will pay its own hearing costs (e.g., hearing room rental, court reporting fees, hearing officer expenses).

If you have any questions, please contact the Clerk's Office at (312) 814-3461.

## DOCUMENTATION OF SERVICE

**Note to the Complainant:** This Documentation of Service must accompany the Formal Complaint and the Notice of Filing. Once you have completed the Documentation of Service, the Formal Complaint, and the Notice of Filing, you must file these three documents with the Board's Clerk *and* serve a copy of each document on each respondent.

This form for the Documentation of Service is designed for use by a non-attorney and must be notarized, *i.e.*, it is an "affidavit" of service. An attorney may modify the form for use as a "certificate" of service, which is not required to be notarized.

### Affidavit of Service

I, the undersigned, on oath or affirmation, state that on the date shown below, I served copies of the attached Formal Complaint and Notice of Filing on the respondent at the address listed below by one of the following methods: [*check only one—A, B, C, D, or E*]

A. \_\_\_\_\_ U.S. Mail or third-party commercial carrier with the recipient's signature recorded by the U.S. Postal Service or the third-party commercial carrier upon delivery. Attached is the delivery confirmation from the U.S. Postal Service or the third-party commercial carrier containing the recipient's signature and showing the date of delivery as \_\_\_\_\_ [month/date], 20\_\_\_. [*Attach the signed delivery confirmation showing the date of delivery.*]

B.  U.S. Mail or third-party commercial carrier with a recipient's signature recorded or to be recorded by the U.S. Postal Service or the third-party commercial carrier upon delivery. However, the delivery confirmation from the U.S. Postal Service or the third-party commercial carrier containing the recipient's signature is not available to me at this time. On August 14 [month/date], 2019, by the time of 5:30 AM/PM at USPS office, 512 Chestnut St. Winnetka IL 60093 [*address where you provided the documents to the U.S. Postal Service or the third-party commercial carrier*], copies of the attached Formal Complaint and Notice of Filing were provided to the U.S. Postal Service or the third-party commercial carrier, with the respondent's address appearing on the envelope or package containing these documents, and with proper postage or delivery charge prepaid. [*Within seven days after it becomes available to you, file with the Board's Clerk the delivery confirmation—containing the recipient's signature and showing the date of delivery—and identify the Formal Complaint to which that delivery confirmation corresponds.*]

C. \_\_\_\_\_ Personal service and I made the personal delivery on \_\_\_\_\_ [month/date], 20\_\_, by the time of \_\_:\_\_ AM/PM.

D. \_\_\_\_\_ Personal service and another person made the personal delivery. Attached is the affidavit of service signed by the other person (or the declaration of service signed

by the process server) who made the personal delivery, showing the date of delivery as \_\_\_\_\_ [month/date], 20\_\_\_. [Attach the other person's signed affidavit or declaration showing the date of delivery.]

E. \_\_\_\_\_ Personal service and another person made or will make the personal delivery. However, the affidavit of service signed by the other person (or the declaration of service signed by the process server) who made or will make the personal delivery is not available to me at this time. On \_\_\_\_\_ [month/date], 20\_\_, by the time of \_\_:\_\_ AM/PM, at

[address where you provided the documents to the person making the personal delivery], copies of the attached Formal Complaint and Notice of Filing were provided to \_\_\_\_\_ [name of the person making the personal delivery], with the respondent's address appearing on the envelope or package containing these documents, and with proper delivery charge prepaid. [Within seven days after it becomes available to you, file with the Board's Clerk the affidavit or declaration of service—containing the signature of the person who made personal delivery and showing the date of delivery—and identify the Formal Complaint to which that affidavit or declaration corresponds.]

RESPONDENT'S ADDRESS:

Name: New Tier High School \_\_\_\_\_

Street: 385 Winnetka Ave \_\_\_\_\_

City, state, zip code: Winnetka, IL 60093 \_\_\_\_\_

(list each respondent's name and address if multiple respondents)

\_\_\_\_\_  
Complainant's signature

Street: 124 Woodland Ave \_\_\_\_\_

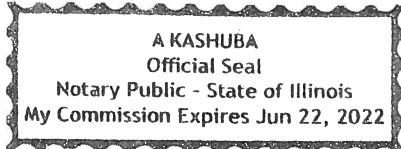
City, state, zip code: Winnetka, IL 60093 \_\_\_\_\_

Date: August 14, 2019 \_\_\_\_\_

Subscribed to and sworn before me

this 14<sup>th</sup> day of August, 2019.

\_\_\_\_\_  
Notary Public



My commission expires: June 22, 2022

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New Trier High School  
385 Winnetka Avenue  
Winnetka, IL 60093

August 15, 2018

Attn: Mr. Steve Linke

Re: Measurement of Environmental Noise  
New Building Rooftop Mechanical Equipment and Dock Dust Collector

Dear Steve:

We conducted environmental noise measurements on the early mornings of Thursday, May 31 and July 25, 2018. The purpose of these measurements was to quantify sound levels due to operation of mechanical equipment located on the roof and loading dock of the new building.

A new building was constructed on Winnetka Avenue that replaced the Music/Performing Arts Building, Cafeteria and Tech Arts Building. Demolition of the previous buildings started in June 2015 and the new building was completed in late 2017. Mechanical equipment installed on the roof of the four story building provides building ventilation and exhaust for kitchen, science, art, tech and other services. Additionally, dust collection equipment located in the loading dock area is used for a few hours each day.

Complaints have been received from a resident along Woodland Avenue regarding excessive noise. Winnetka addresses noise from mechanical equipment in the village code in section 15.44.050 (Freestanding Heating or Cooling Devices) and refers to the standards administered by the Pollution Control Board as set forth in the Illinois Administrative Code, Title 35, Subtitle H, Chapter I, Sections 901.102(a) and (b).

#### **Acoustical Criteria**

For commercial and residential land uses, Illinois permits the equivalent of 55 dBA during the day (7:00 a.m. to 10:00 p.m.) and 44 dBA at night (10:00 p.m. to 7:00 a.m.) The regulations apply at the residential property line, require readings energy-averaged over a one hour time period and call for sound level readings in each of nine octave (frequency) bands. The ambient (or background) sound level must be established, through measurement at the site. In the case where the Illinois limits are exceeded by the ambient environment, the limits do not have to be met.

The Illinois limits are stated in terms of octave band sound levels. Thus, for daytime and nighttime, the limits must be met in each of nine frequency bands. Octave band sound level measurements were conducted by Shiner in one-third octave bands which were converted to octave bands and A-weighted sound levels.

#### **Acoustical Measurements**

We conducted sound level readings at the west edge of the public sidewalk at the north property line of 124 Woodland Ave. on Thursday, May 31, 2018 between 4:20 a.m. and 4:36 a.m. These hours were chosen since noise from environmental sources (cars, trains, planes, etc.) is minimized and the Illinois Noise Regulations are most restrictive before 7:00 a.m.

New Trier High School

August 15, 2018

We returned to the same location on Wednesday July 25, 2018 between 6:29 a.m. and approximately 7:00 a.m. to repeat dust collector measurements.

Figure 1 is an aerial photograph showing the microphone location. The photo has been cropped at the east edge since a current aerial photograph showing the new school building is not yet available.



Figure 1. Aerial Photo of Measurement Location – 124 Woodland Ave., Winnetka, IL

The following instrumentation was used on both dates:

- Norsonic 140 integrating sound level meter/real time analyzer
- Nor 1225 1/2 inch condenser microphone
- Nor preamplifier 1209/13239
- Nor 1251 Sound Calibrator
- Tripod, extension cable, windscreen

#### Rooftop Mechanical Equipment

On May 31, 2018, we used a fiberglass mast attached to a heavy duty tripod to elevate the microphone to a height of 18 feet above ground level in order to simulate noise heard at the second floor of residences. Conditions were dry on the night of Thursday, May 31, 2018 with no precipitation. Roadways were dry. The temperature remained constant at 71° F and the wind was calm. As the study progressed, noise from traffic and birds increased.

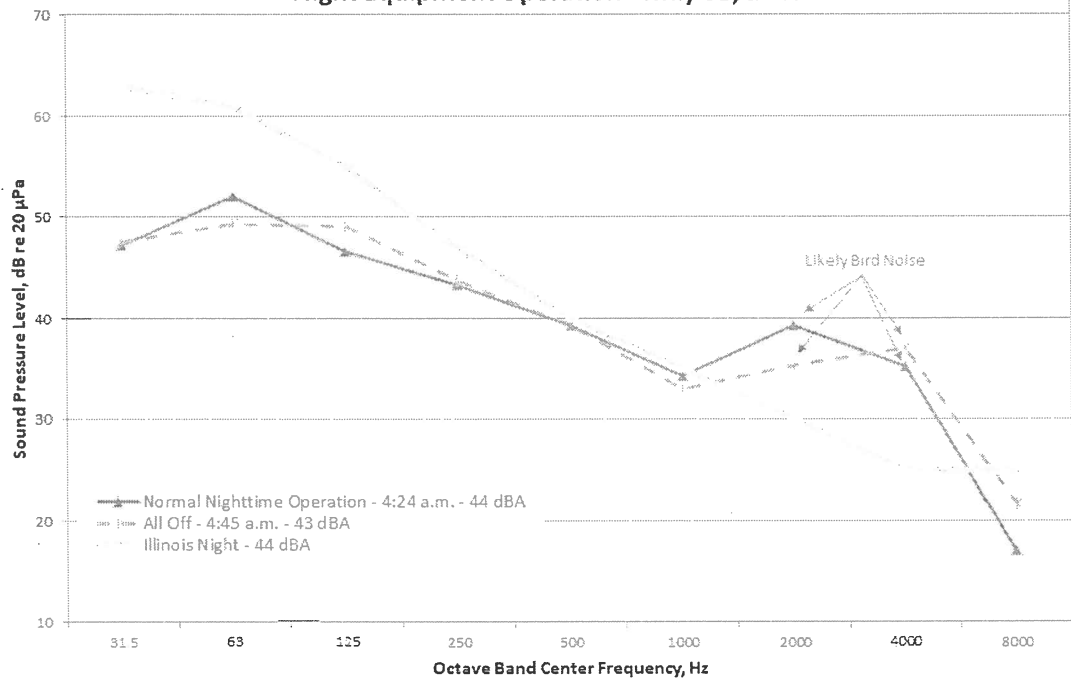
Since noise from fans and other rooftop mechanical sources is steady-state (does not vary with time), we conducted a series of 20 second-long readings under various equipment operating conditions in order to determine the energy average sound level (Leq). We conducted measurements when transportation noise was at its lowest. Readings were initially taken with equipment in normal nighttime operation and then then with all equipment briefly shut off. For reporting purposes, we chose the 20 second reading with the lowest overall sound level. In this way, the chosen reading was least influenced by transportation noise. It should be noted that readings taken with New Trier equipment operating also include contribution from transportation noise sources.

New Trier High School

August 15, 2018

Figure 2 shows the results of our readings taken with equipment that normally operates during nighttime hours (ERU units 1, 3 and 4), the ambient or background (all equipment off) and the Illinois nighttime standards. The graph is plotted in terms of octave band sound level versus sound level. With equipment operating, the graph shows compliance with the Illinois standards except in the 2000 and 4000 Hz frequency bands. We believe that energy in these frequency bands is due to awakening birds. It should also be noted that noise from the ambient environment also exceeds the Illinois standards in these frequency bands. In fact in the 4000 Hz frequency band, measured environmental noise exceeds that taken with New Trier equipment on. We have found that this is a common occurrence when source sound levels are low.

**Figure 2. New Trier High School - New Building  
Night Equipment Operation - May 31, 2018**



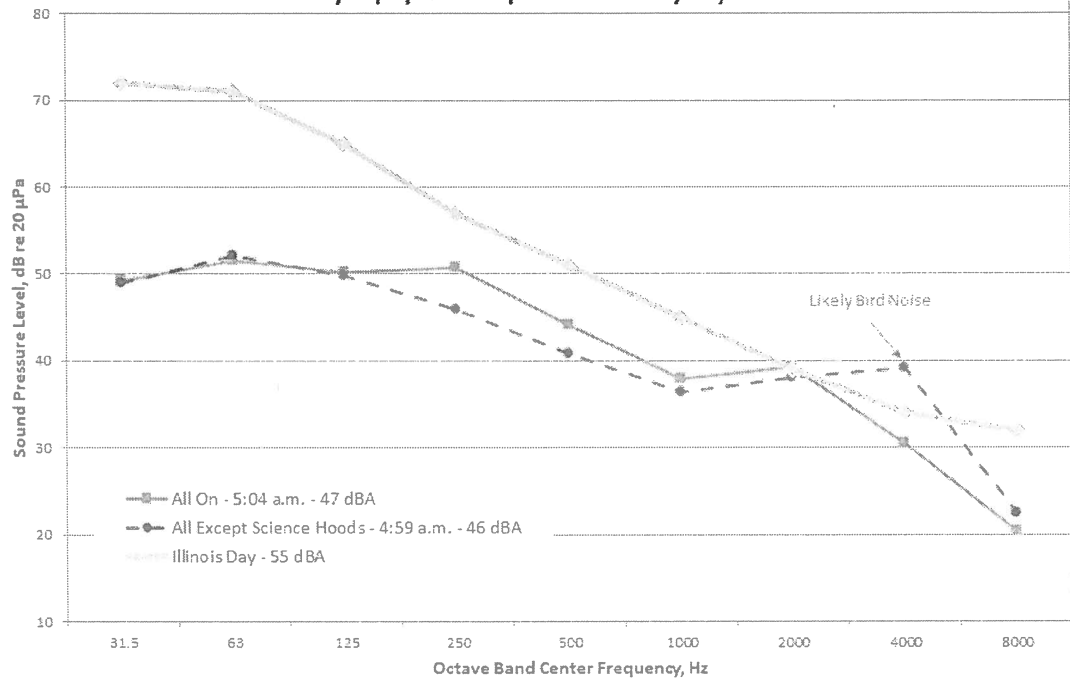
In order to investigate noise from equipment operating during the day, building personnel manually started rooftop mechanical equipment. Readings were taken during the early morning hours in order to minimize transportation noise, which would have made assessment of mechanical noise difficult or impossible during daytime hours.

Because the science fume exhaust fans (EF-FH1, FH2 and FH3) are located near the west edge of the building, separate readings were taken with all equipment operating (except these fans) and all equipment operating (including the science hoods). Figure 3 shows this comparison plotted against the daytime Illinois limits. Note that Illinois permits greater levels of noise during daytime hours.

Figure 3 shows substantial compliance with the Illinois standards when all equipment was operating. In the 2000 Hz band, noise with all equipment operating (including the science fans) is equal to the Illinois limit. Noise with all equipment except the science exhaust fans was lower than the standards in the 2000 Hz band and higher in the 4000 Hz band. Again, we believe that energy in this band is due to birds and is a common occurrence in environmental noise measurements when mechanical equipment level are low. Results of the studies are summarized in Table 1.



**Figure 3. New Trier High School - New Building  
Day Equipment Operation - May 31, 2018**



Dock Dust Collector

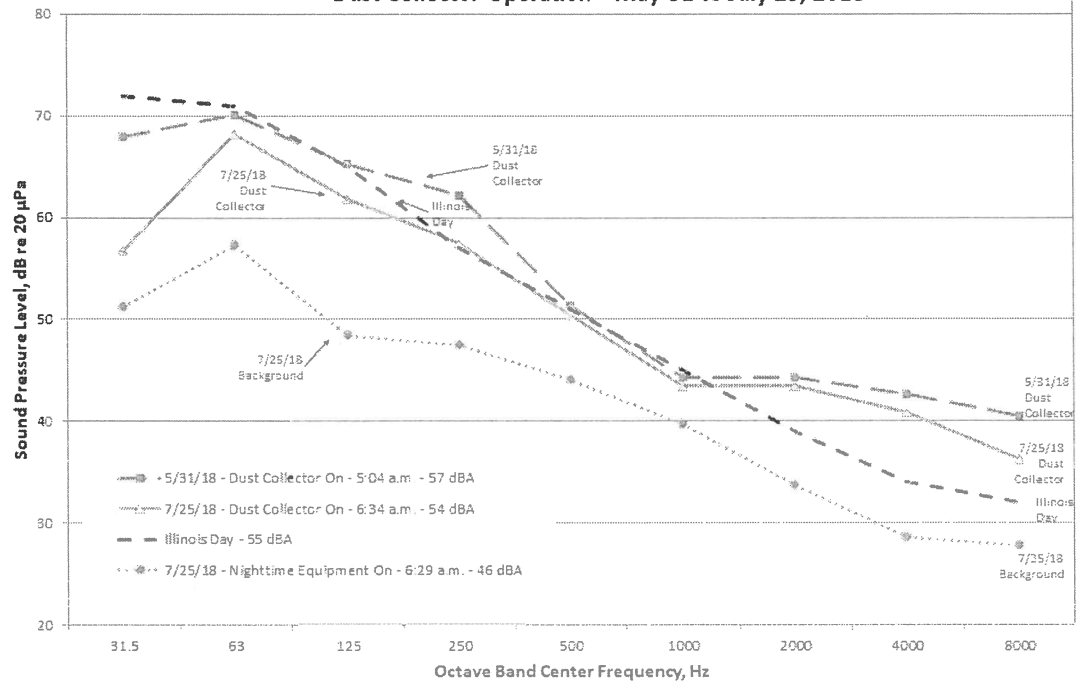
The dust collector is presently operated on an as-needed basis, three to four times per day for periods up to 40 minutes. Following our rooftop mechanical equipment noise testing at 124 Woodland Ave. on May 31, 2018, the microphone was positioned at a height of 4-1/2 ft above ground level and the dust collector was operated for a short period of time at 5:08 a.m. Figure 4 below is a plot of the measured 30 second average sound level versus octave band frequency. The figure indicates that Illinois daytime limits are exceeded in the 250 Hz and upper frequency bands. Results are summarized in Table 2.

On July 25, 2018, we returned to the school specifically to measure dust collector noise following installation of additional inlet ductwork inside the school. Readings were conducted at the same location as on May 31, 2018 but at 6:29 a.m. Results show a decrease noise at the blade pass frequency (250 Hz), upper frequency bands (4000 and 8000 Hz) and in the low frequencies. When compared to the Illinois standards, compliance was reached at 250 Hz, however noise in the 2000, 4000 and 8000 Hz bands is still in exceedance by several decibels.

New Trier High School

August 15, 2018

**Figure 4. New Trier High School - New Building  
Dust Collector Operation - May 31 vs July 25, 2018**



**Table 1. Results of Study – New Trier High School New Building – Rooftop Equipment  
124 Woodland Ave. – May 31, 2018**

	Octave Band Sound Pressure Level, dB re 20 µPa									
	31.5	63	125	250	500	1000	2000	4000	8000	Awt
Normal Nighttime Operation	47	52	47	43	39	34	39*	35*	17	44
All Off	48	49	49	44	39	33	35*	37*	22	43
Illinois Nighttime Limit	63	61	55	47	40	35	30	25	25	44
<b>Rooftop Equipment</b>										
All Daytime Except Fume Exh	49	52	50	46	41	36	38	39*	22	46
Normal Daytime Operation	49	52	50	51	44	38	39	30	20	47
Illinois Daytime Limit	72	71	65	57	51	45	39	34	32	55

\* Includes noise from birds

**Table 2. Results of Study – New Trier High School New Building – Dust Collector  
124 Woodland Ave. – May 31 and July 25, 2018**

	Octave Band Sound Pressure Level, dB re 20 µPa									
	31.5	63	125	250	500	1000	2000	4000	8000	Awt
5/31/18 Dust Collector	68	70	65	62	51	44	44	43	41	57
7/25/18 Dust Collector	57	68	62	57	50	44	44	41	36	54
7/25/18 Nighttime Operation	51	57	49	48	44	40	34	29	28	46
Illinois Daytime Limit	72	71	65	57	51	45	39	34	32	55

New Trier High School

August 15, 2018

### Conclusions

Figure 2 shows that noise from rooftop ventilating equipment normally operating during nighttime hours likely does not exceed the nighttime Illinois standards which are administered by the Illinois Pollution Control Board. Since readings taken with equipment running also include noise from transportation noise sources, we expect that noise generated by the school's mechanical equipment is lower than was measured.

In the same fashion, Figure 3 shows that rooftop equipment operating during the daytime likely does not exceed the daytime Illinois limits. Based on near field sound level measurements later taken on the building roof, we expect that noise from the science exhaust fans may be identifiable from time to time during the day because of the character and frequency content of this noise.

Operation of the dust collector can exceed the daytime Illinois noise standards in the 2000, 4000 and 8000 Hz bands.

### Recommendations

The school has already treated the dust collector motor with a 1-1/2" thick insulated sheet metal enclosure. Since only high frequency attenuation is now required, lagging of the motor enclosure and inlet/discharge may yield compliance. However, it should be realized that 7 dB of attenuation in the 4000 Hz band is required.

To address radiated noise from the motor and associated ductwork, we recommend lagging inlet and discharge round and rectangular ducts for a distance of 15-20 ft on each side of the motor enclosure. Wrap duct with 2" thick 5 pcf fiberglass and lag with 2 psf mass loaded vinyl (e.g., Kinetics KNM-200AL). Follow the manufacturer's instructions and tape or band all seams. The baghouse should also be treated in a similar manner.

Should lagging not provide the required reduction, then an L-shaped barrier wall should be constructed that shields Woodland Ave. from the dust collector and associated ductwork. At the west end of the generator, the barrier wall should extend south from the brick wall and then east to a point 3 ft beyond the dust collector motor housing and baghouse. The wall should exceed the highest point by 2 feet. The barrier wall should have a minimum sound transmission class of STC 30 and be sound absorptive on the inner face meeting NRC 0.85.

If you have questions concerning this report, please do not hesitate to contact us.

Respectfully submitted,

Shiner + Associates, Inc.



Brian L. Homans

BLH/mo/07  
1180514

New Trier High School

August 15, 2018

**Metal Noise Barrier and Lagging Manufacturers**

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The Imbert Corporation  
7030 N. Austin Av.  
Niles, IL 60714  
John Grzeskowski  
johng@imbortcorp.com  
847-647-2393  
[www.kochllc.com/acoustical/barriers1/](http://www.kochllc.com/acoustical/barriers1/)

Semco, Inc.  
Hatchell & Associates, Inc.  
414 Fullerton Av.  
Elmhurst, IL 60126  
Attn: Rob  
630-833-3838  
[www.semcohv.com/products/dap/acoustic/barriers/index.php](http://www.semcohv.com/products/dap/acoustic/barriers/index.php)

Noise Barriers, LLC  
2845 Ashley Circle – Suite 103  
Libertyville, IL 60048  
847-362-7440  
Todd Mitchell  
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Kinetics Noise Control  
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