Minnesota Sports Facilities Authority

1005 4th Street South, Minneapolis, MN 55415



MINNESOTA SPORTS FACILITIES AUTHORITY Meeting Minutes – November 15, 2019 at 9:00 A.M. Mill City Museum 710 South 2nd Street Minneapolis, MN 55401

1. CALL TO ORDER

Chair Vekich called the meeting of the Minnesota Sports Facilities Authority ("MSFA" or "Authority") to order at 9:00 A.M.

2. ROLL CALL

Commissioners present: Chair Michael Vekich, Bill McCarthy, Barbara Butts Williams, Tony Sertich, and Angela Burns Finney.

3. APPROVAL OF MEETING MINUTES – October 18, 2019. See, Exhibit A.

4. **BUSINESS**

a. Action Items

i. Sale of Turf Protection System

Jim Farstad, Executive Director of the MSFA, stated that U.S. Bank Stadium continues to host major events including concerts, dirt events, trade shows, and many others, all of which require a turf protection system. Due to the abundance of events held at the stadium since its opening in 2016, the current OmniDeck turf protection system functionality has deteriorated. In order to continue to attract and host high profile events at U.S. Bank Stadium, this system needs to be replaced to protect the field and ensure the safety of stadium guests. *See*, <u>Exhibit B</u>.

Commissioner Sertich moved and Commissioner Butts Williams seconded the motion to approve the following recommended motion, which was unanimously adopted:

The MSFA authorizes the Executive Director to conduct a sealed bid auction to dispose of surplus Turf Protection System.

b. Report Items

i. Audubon Minnesota Report

Rob Schultz, Executive Director of Audubon Minnesota, presented the results of the U.S. Bank Stadium Bird Collision Study. *See*, <u>Exhibit C</u>.

Chair Vekich thanked Mr. Schultz for his detailed report, and then reported a few initiatives that the MSFA has already implemented in order to reduce bird glass collisions. The first initiative is the stadium's "lights out" program, where stadium officials have begun turning off the lights each night to reduce the illusion that birds can fly through the glass. Secondly, MSFA staff has been working with landscape architects to determine how to scale back vegetation to deter birds from nesting and living within the stadium perimeter. And lastly, the MSFA has been looking into the solutions and costs for retrofitting the stadium with bird safe glass.

Mr. Vekich asked Mr. Schultz if the patterned window treatment decals will eliminate all bird collisions. Mr. Schultz stated that it would not eliminate all collisions, however; it would significantly reduce them by roughly 80-85%. Mr. Schultz then stated that Audubon Minnesota strongly requests that the MSFA do its due diligence before making such a large and expensive decision. He noted that the decision should not be rushed, and that Audubon Minnesota has experts who are willing to help the MSFA make the best, most informative, and cost-efficient solution. Commissioner McCarthy thanked Mr. Schultz for the report and stated that many of these bird collisions happen at night. He asked Mr. Schultz how effective the window film would be at night, and Mr. Schultz stated that he believes it would greatly reduce the collisions, however every building is unique, and an expert would be able to provide more specific information.

Chair Vekich noted that he looks forward to working with Audubon Minnesota and Audubon Minneapolis in the near future, and that the MSFA will hopefully make a decision by the 3rd quarter of next year.

ii. ASM Global Event Update

John Drum, Interim General Manager of U.S. Bank Stadium, gave an update about events at U.S. Bank Stadium. *See*, <u>Exhibit D</u>.

Commissioner Sertich asked Mr. Drum what needs to be done to convert the stadium from a MSHSL game to a Minnesota Vikings game, and Mr. Drum stated that cleaning and grooming the field in such a short amount of time is their greatest challenge. It is a very detail-oriented task, but it is a task that ASM Global staff is prepared for, and they have executed it flawlessly.

iii. Executive Director Report

Mr. Farstad stated that the MSFA and ASM Global completed a walk-through of the SE parking lot, Mills Fleet Farm parking ramp, and the Downtown East ramp to identify potential locations for e-Car charging stations. We are currently at the exploration stage for this concept and will continue to develop ideas. Our next scheduled review point is in late December 2019.

Mr. Farstad then stated that the MSFA made a transition to a new IT Management Services Provider, which is in full swing with a targeted migration date of November 26, 2019. The MSFA will continue to leverage Stadium network and data center infrastructure, but will be shifting the majority of its email,

calendaring, productivity tools, accounting systems and electronic document management system and records to hosted cloud data center locations. This will increase the resiliency of MSFA's IT environment while reducing costs.

Mr. Farstad announced that the stadium maintenance updates have recently been completed. An area of the stadium's northwest prow has been prone to icicle formation, and in an effort to mitigate this recurring condition, a new heat trace and gutter were installed.

Lastly, Mr. Farstad noted that the MSFA is continuing to oversee maintenance of the parking ramps, and we are currently working on projects that will increase customer experience. Some of these projects include: adding additional cameras and call boxes for enhanced security purposes, installation of carpet tile replacements, and the addition of ADA door hardware.

5. PUBLIC COMMENTS

1. Constance Pepin: Ms. Pepin stated that the study presented by Mr. Schultz mirrored the results from Dr. Loss' study that was previously presented to the MSFA board. Ms. Pepin stated that the study validates the findings from the fall of 2016 that the most dangerous sections of the stadium's glass are the west wall, the north/northwest area, and the south wall. She noted that the study identified three main factors contributing to bird-building collisions: lighting, vegetation, and glass. Ms. Pepin also noted that the number of bird fatalities reported in Dr. Loss' study may not be accurate, as many of the birds may have flown away after a collision. Lastly, Ms. Pepin noted that Dr. Loss' study substantiates their findings about the number of bird deaths per year and validates their conclusion that retrofitting the glass should be prioritized over other mitigation strategies.

2. Wendy Haan: Ms. Haan stated that early design discussions included options for bird-safe glass, that were consistent with the wishes of the community. Ms. Haan noted that birds play an essential role in our ecosystem as they provide a variety of beneficial services that are vital to the natural world, and that while people may think 111 bird deaths a year does not sound drastic, however, breeding will decrease,

and this will significantly reduce the bird population. Lastly, she stated that retrofitting the stadium has environmental benefits and will be a huge public relations boost for the stadium.

3. Stephen Greenfield: Mr. Greenfield stated that the changes needed to retrofit the stadium are simple. He noted that birds cannot see glass, but they can see a small and unobtrusive white or translucent spot placed on the glass surface. Spots placed on the glass will reduce the number of bird collisions, and it is most beneficial if the spots are installed within the first 50 feet of the height of the building. Mr. Greenfield then stated that the best long-term solution for bird safe windows is fritted glass, but banners, netting, and film with paint or dots are effective as well. Lastly, he stated that 3M has come up with a window film for buildings that will reduce bird collisions.

4. Jerry Bahls: Mr. Bahls stated that reducing vegetation and participating in the "Lights Out" program will reduce fatalities as Dr. Loss stated in his study. The study also suggests that a major reduction in collisions may be achieved by focusing mitigation on one or more particularly problematic spans of glass. Mr. Bahls stated that Audubon Minneapolis would like to assist the MSFA in assessing the most economical, architecturally compatible, and effective retrofit possible. In order to be ready for the spring migration, he suggested that the MSFA begin the process as soon as possible to do a thorough analysis of retrofit options. Mr. Bahl's coalition recently contacted Michael Mesure of the Fatal Light Awareness Program (FLAP), who offered to meet with the MSFA to share his knowledge of retrofitting buildings to make them safe for birds.

5. Representative Phyllis Kahn: Ms. Kahn stated that she was involved with the safe bird glass initiative law which was passed by the Minnesota Legislature before U.S. Bank Stadium was built, however, the law did not go into effect until after construction of the stadium was completed. Ms. Kahn believes that the stadium should have been constructed in accordance with the law in order to prevent bird collisions and protect the environment. She noted that the Javits Center in New York City will be replacing all of the glass on their building to prevent bird fatalities, and she highly recommends that stadium officials consider replacing the glass at U.S. Bank Stadium.

6. Lisa Venable: Ms. Venable stated that activists have petitioned for bird safe glass at the stadium for many years. She also stated that the Dallas Cowboys' stadium has bird safe glass, and questioned why U.S. Bank Stadium does not, as both buildings were designed by the same architectural firm. She noted

Approved and adopted the 15th day of November 2019, by the Minnesota Sports Facilities Authority.

Tony Sertich, Secretary/Treasurer

James Farstad, Executive Director

Minnesota Sports Facilities Authority

1005 4th Street South, Minneapolis, MN 55415



Exhibit A

MINNESOTA SPORTS FACILITIES AUTHORITY Meeting Minutes – October 18, 2019 at 9:00 A.M. U.S. Bank Stadium – Medtronic Club 401 Chicago Ave Minneapolis, MN 55415

1. CALL TO ORDER

Chair Vekich called the meeting of the Minnesota Sports Facilities Authority ("MSFA" or "Authority") to order at 9:00 A.M.

2. ROLL CALL

Commissioners present: Chair Michael Vekich, Bill McCarthy, Barbara Butts Williams, Tony Sertich, and Angela Burns Finney.

3. APPROVAL OF MEETING MINUTES – September 30, 2019. See, Exhibit A.

4. **BUSINESS**

a. Action Items

i. Approve Huntington Master Lease and Signature Systems Contract for Turf Cover

Jim Farstad, Executive Director of the MSFA, stated that on September 5, 2019, the MSFA published an RFP seeking competitive proposals to furnish a new protective 135,000 square foot hardscape turf cover. After a review of the proposals, staff recommends the OmniDeck Turf Cover solution offered by Signature Systems Group for \$991,300.00 plus sales tax. Huntington Technology Finance has agreed to

finance the acquisition of the new turf cover by providing a Master Lease Agreement which allows the MSFA to acquire the new turf cover at a monthly cost of approximately \$28,000 for a period of 48 months, with a final payment of \$1 to acquire unencumbered title to the turf cover at the end of the 48-month financing term. *See*, <u>Exhibit B</u>.

Chair Vekich asked Mr. Farstad about the lifespan of the turf cover, and Mr. Farstad stated that the expected lifespan is between four to six years.

Chair Vekich then asked if this meets the MSFA's financial obligations, and Jay Lindgren, MSFA's legal counsel, stated that it is considered routine and that the MSFA will own the turf protection system after four years. Mr. Lindgren also noted that after the four years of financing is complete, the MSFA can purchase the turf protection system for \$1. If the turf protection system is in good condition and can last for an additional two years, this would be beneficial to the MSFA.

Lastly, Mr. Farstad stated that the MSFA has received a credit for the existing turf protection system, and that the MSFA will post a RFP for the sale of the current turf protection system in November.

Commissioner Sertich moved and Commissioner Butts Williams seconded the motion to approve the following recommended motion, which was unanimously adopted:

The MSFA authorizes the Chair and Executive Director to accept the proposal of Signature Systems Group and to negotiate and execute a contract agreement with Signature Systems Group to acquire the new turf cover, and the Chair and the Executive Director are authorized to execute such documents and to take such other actions on behalf of the MSFA as are necessary to accomplish the acquisition. The MSFA also authorizes the Chair and the Executive Director to negotiate and execute a Master Lease Agreement with Huntington Technology Finance and a financing schedule to the Master Lease Agreement in an amount not to exceed \$28,000 per month for 48 months, with a \$1.00 purchase option, and to execute such documents and to take such other actions on behalf of the MSFA as are necessary to accomplish the financing. Funds necessary to pay the rental payments due under the financing schedule (and the Master Lease Agreement) during the current fiscal year are available and hereby appropriated and authorized to be used for such purpose. The MSFA further makes the following findings: (1) all future rental payments are payable exclusively from moneys legally appropriated and provided therefore by the MSFA in each future fiscal year; and (2) in the sole event that funds are not so appropriated for any future fiscal year, the MSFA will have the right to terminate the financing at the end of its then current fiscal year and surrender the new turf cover to Huntington Technology Finance. All prior actions taken by the MSFA and its staff relating to this acquisition and financing are ratified and approved in all respects.

ii. Approval of Amended 2018 – 2019 Operating Account Budget – Minneapolis LOC NCAA Final Four 2019 contribution

Mr. Farstad stated that on December 21, 2018, the MSFA executed the Event Support and Funding Agreement with the Minneapolis Final Four Local Organizing Committee (LOC). Per the terms of the agreement: the LOC must pay \$200,000 to the Authority for event related expenses, the Authority would retain revenues from stadium food and beverage sales, merchandise sales, and game programs, and if any LOC funds remained after payment of their obligations then the remaining funds would be paid to the Authority for event expenses. The LOC has paid all of their obligations and their remaining funds were \$1,121,654.41. The LOC recently issued a payment to the Authority for said funds. *See*, Exhibit C.

Commissioner Butts Williams moved and Commissioner McCarthy seconded the motion to approve the following recommended motion, which was unanimously adopted:

The MSFA approves an increase of \$1,121,654 to the Operating Account revenue budget, Minneapolis LOC NCAA Final Four 2019 contribution, thereby increasing it from \$200,000 to \$1,321,654. The MSFA also approves an increase of \$1,121,654 to the 2018-2019 revised Operating Account revenue budget for a total revenue budget of \$51,555,138.

b. Report Items

i. ASM Global Introduction/Event Update

John Drum, Interim General Manager of U.S. Bank Stadium, gave an update about the merger of SMG and AEG. Mr. Drum stated that on Oct 1, 2019, AEG Facilities and SMG announced that they completed

their merger to create a new, standalone global facility management and venue services company, which will be called ASM Global. He noted that SMG has been known as the gold standard in event management, and that AEG Facilities has been the global innovator in live entertainment venues. Because of this merger, ASM Global will create the world's most amazing places and spaces, along with a talented employee base.

Mr. Drum stated that together, SMG and AEG will operate the world's most prestigious entertainment, sports, and conference venues with more than 300 arenas, stadiums, convention and exhibit centers, and performing arts venues on 5 continents, covering more than 23 million square feet of convention center space, and 2.7 million seats under management. Over 160 million guests will be hosted annually around the world, and these guests will all be served by the more than 60,000 passionate team members.

Mr. Drum then stated that while both AEG and SMG operate in the same industry, each company brings complementary skill-sets and experience to the table, with a common focus on creating the best experience for its clients, partners and guests. Mr. Drum noted that rather than an American company doing business on 5 continents, ASM Global will operate and act as a global business serving customers on a local level. U.S. Bank Stadium is one of the top venues in the ASM Global portfolio, and ASM Global will apply the power of its global expertise to deliver localized solutions that make a difference and help create the places where communities come together and prosper.

Lastly, Mr. Drum provided the board with an update on stadium events. He stated that there have been many private event rentals, and some include: Augsburg University's Graduation, United Rentals corporate event, the Page Gala, and Children's Minnesota 5K Walk. He stated that the 2019 Vikings football season is off to a great start, and that five home games have been completed, and that the stadium is performing at a high level. The Minnesota State High School League Championship games in both men and women's soccer will take place from October 28-31, and the semi-final football games will be held from November 14-16, with the championship games on November 29th and November 30th. Mr. Drum stated that other upcoming events include the Holiday Boutique, Monster Jam, NCAA Division 1 Wrestling Championship, and Kenny Chesney.

Chair Vekich thanked Mr. Drum for his presentation and congratulated him on the success of the events, as well as the SMG and AEG merger. He then asked Mr. Drum if the MSFA should expect any changes, and Mr. Drum stadium that there may be some new faces, but the majority of the people and procedures will remain the same.

Commissioner McCarthy asked Mr. Drum how many companies in the world do similar work as ASM Global, and Mr. Drum stated that ASM is the largest stadium venue management company in the world, and that there are only four other companies who do venue management, but they operate on a much smaller scale.

Commissioner Butts Williams asked Mr. Drum what ASM stands for, and Mr. Drum stated that it is a combination of the letter from SMG and AEG.

Lastly, Mr. Lindgren stated that the MSFA's contract is with SMG, and that everything within the contract will stay the same. He noted that there may still be documents and correspondence that will continue to say "SMG", due to the language in said contract.

ii. Executive Director Report

Mr. Farstad stated that the MSFA recently had a listening session with stadium partners and some Employee Assistance Firms from the Twin Cities. ASM Global, Aramark, WESS, and G4S met with Comunidades Latinas Unidas en Servicio (CLUES), Hmong American Partnership (HAP), and Summit Academy to discuss creating partnerships for employment at the stadium, as well as the RFP process. The MSFA, stadium partners, and the Employee Assistance Firms will be meeting again in the near future to discuss next steps, as well as to continue to build a deeper relationship. Mr. Farstad stated that the stadium is reviewing its landscaping project with DID, and that the warranty work has been completed. The MSFA is currently developing options to address specific weak spots within the landscaping, and we are working to clarify and control unintended pathways. Lastly, Mr. Farstad announced that the MSFA is exploring electric car charging stations at the stadium and the parking ramps, and we are developing scope and funding strategies to bring the technology to the stadium. There will be walkthroughs later in October and more information will follow.

5. PUBLIC COMMENTS

1. David Glass and Henry Boucha: Mr. Glass and Mr. Boucha addressed the MSFA board to express their concern about the mascot for the Washington D.C.'s NFL team. They stated that the term "Red Skins" is incredibly offensive, as it refers to the skinning and selling of tribe members for cash, in order to eliminate the Native American population. He stated that the team was named "Red Skins" back in the 1930s, and protestors have tried to get the name changed ever since the team was founded. Back in 2014, over 4,000 people protested and requested the NFL change the name, without success. Mr. Glass and Mr. Boucha stated that there will be a large but peaceful protest at the Minnesota Vikings vs. Washington Red Skins football game, but they want to be transparent and cooperate with the MSFA board, the Minnesota Vikings, and the city of Minneapolis. The protest will begin at 2 pm at Peavey Park in Minneapolis, and the group will walk down Park Avenue towards U.S. Bank Stadium.

6. DISCUSSION

There was no discussion

7. ANNOUNCEMENT OF NEXT MEETING

Chair Vekich announced that the next MSFA meeting will be held on November 15, 2019, at Mill City Museum at 9:00 A.M.

8. ADJOURNMENT

There being no further business to come before the MSFA, the meeting was adjourned at 9:40 A.M.

Approved and adopted the 15th day of November 2019, by the Minnesota Sports Facilities Authority.

Tony Sertich, Secretary/Treasurer

James Farstad, Executive Director



November 15, 2019

Exhibit B

MEMORANDUM

TO: MSFA Commissioners

FROM: James Farstad, Executive Director

SUBJECT: Sale of Turf Protection System

As we begin U.S. Bank Stadium's fourth year of operation, the MSFA continues to host major events including concerts, dirt events, trade shows, and many others, all of which require a turf protection system. Due to the abundance of events held at the stadium since the opening in 2016, the current OmniDeck turf protection system functionality has deteriorated. In order to continue to attract and host high profile events at U.S. Bank Stadium, this system needs to be replaced to protect the field and ensure the safety of stadium guests.

A request for proposal to replace the field turf protection system was posted to the Minnesota Sports Facilities Authority's (MSFA) website on July 2, 2019, and the contract was awarded to Signature Systems Group (SSG). Within that contract, SSG provided the MSFA with a discount of \$270,000 or \$2.00 per square feet, as a buy-back benefit. SSG gave U.S. Bank Stadium and the MSFA the right to the floor for either resale, donation, or recycling, and stated that U.S. Bank Stadium and the MSFA may keep any revenue from a resale.

Therefore, the MSFA staff would like to sell the current OmniDeck in order to further offset the cost of the new turf protection system, and is requesting that the board approve a sealed bid auction of the old turf protection system, which will be advertised in the state register and posted on the MSFA's website, at <u>www.msfa.com</u>.

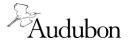
Recommended Motion: The MSFA authorizes the Executive Director to conduct a sealed bid auction to dispose of surplus Turf Protection System.



Audubon Éxhibit C

U.S. Bank Stadium Bird Collision Study

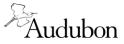
FINAL REPORT PRESENTATION



Monitoring Bird Collisions at U.S. Bank Stadium

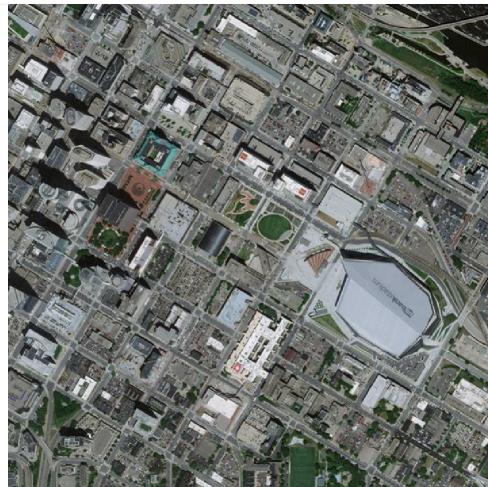
Study Objectives:

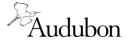
- Implement a systematic survey to estimate the number of bird collisions at U.S. Bank Stadium following established methods.
- Compare collision rates at U.S. Bank Stadium with a representative sample of other buildings in Minneapolis in relation to building size and physical features.
- Recommend possible deterrents, testing and/or management actions to reduce birdbuilding collisions.



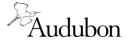
Study Design

- Stadium + 20 buildings in downtown Minneapolis
- Represent a range of known collision risk
- A variety of building types and locations
- Timeframe 2017-2018
 - Spring Migration: Mar 15 May 31
 - Extended Spring: Jun 1-30
 - Fall Migration: Aug 15 Oct 31

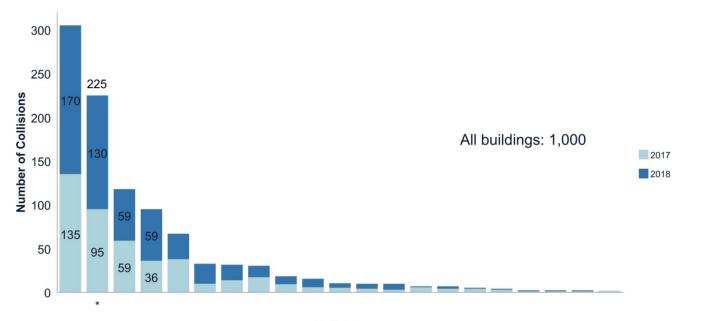




Study Analysis and Results

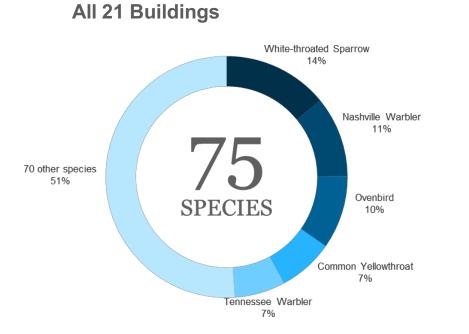


Total Collisions (Low Raw Count)

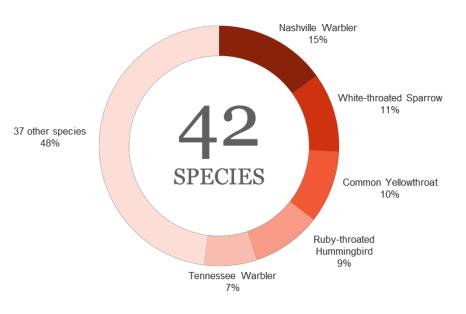




Species Composition



Stadium



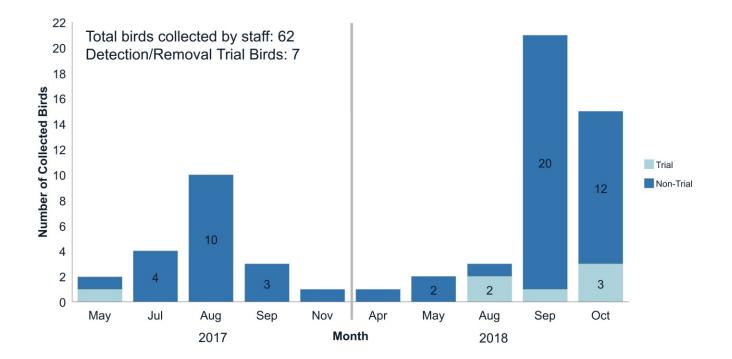


Adjusted Estimates and Total Collisions

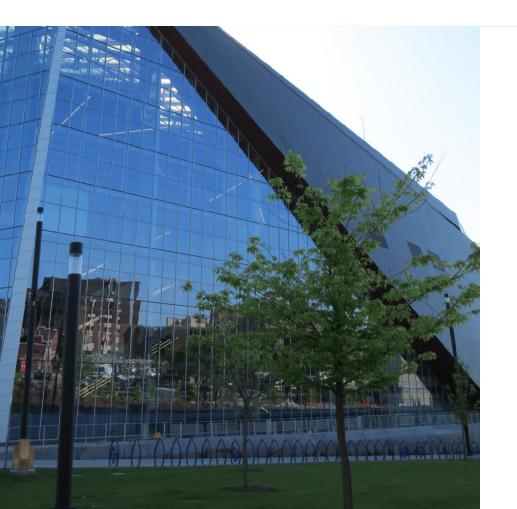
Building ID	Raw count range (fatal)	Bias-adjusted fatalities estimate	Non-fatal collisions	Total collisions
#17	254 - 264	431 (370 – 525)	51	482
#4	91 - 113	297 (202 – 493)	27 - 30	324
Stadium	155 - 159	222 (192 – 274)	70	292
#3	77 - 112	158 (126 – 211)	18 - 20	176
#9	59 - 64	83 (72 – 102)	8 -10	91



Birds Collected by Stadium Staff



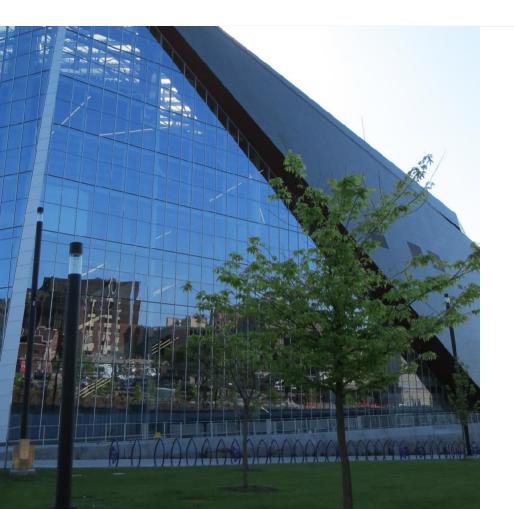




Factors Considered in Collisions

- Building height
- Glass area
- Area of windows lighted at night
- Proportion of glass lighted at night
- Footprint
- Distance to Mississippi River
- Proportion of vegetation within 50m and 100m





Factors Found to Influence Collisions

- Building height
- Glass area
- Area of windows lighted at night
- Proportion of glass lighted at night
- Footprint
- Distance to Mississippi River
- Proportion of vegetation within 50m and 100m



- 66

Study results suggest that large glassy buildings with extensive nearby vegetation or park space, and extensive lighting emitted from windows at night, cause the greatest numbers of collisions.



Stadium Collisions in Context

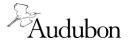
- Four buildings (three high rise office buildings and the Stadium) = 74% of observed collisions, 68% of estimated fatalities
- Estimated fatality rates exceed other buildings in study and are higher than majority of U.S. high rise buildings





Collision Mitigation Recommendations

- **Glass**: treat problematic expanses with bird deterrent window film/markers
- Lighting: reduce effects of lighting at night with additional Lights Out measures targeting key migration periods and times of night
- Vegetation: prioritize glass treatments in areas where vegetation is reflected in glass
- Weather and Seasonality: use weather and bird migration forecasts to inform Lights Out actions



Glass

Role at Stadium

- Extensive use
- Highly reflective
- Unbroken expanses

Collision reduction opportunities

- Decrease reflectivity/transparency with bird deterrent window films/markers
- Prioritize problematic areas





Glass

Discussion

- Collision reduction depends on:
 - Extent of application
 - Existing glass properties
 - Surface application
 - Performance of treatment under lighting and weather conditions





Recommended Glass Treatment Options

	Extent of Glass Treatment	Estimated Collision Risk Reduction	Cost
Option 1	Treat all glass on northwest, southwest, northeast, and southeast façades	Highest	\$\$\$
Option 2	Treat glass on northwest, southwest, northeast, and southeast façades to first 36 feet	High	\$\$
Option 3	Treat all glass on northwest façade	Moderate	\$\$
Option 4	Treat northwest façade to first 36 feet	Lowest	\$

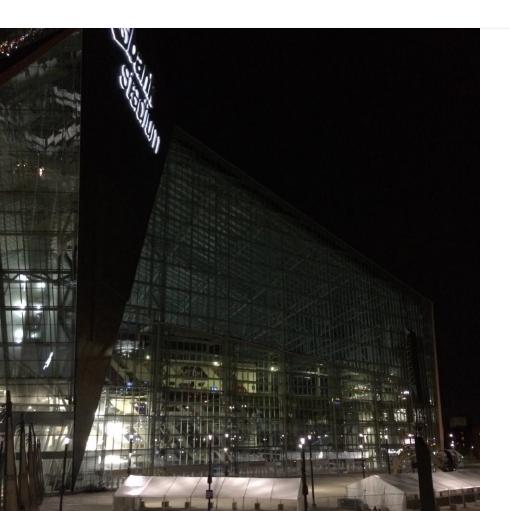


Recommended Materials Cost Estimates

	Total Glass Area (ft²)	CollidEscape Patterns @ \$4.60/ ft² (164' roll, \$295)	Feather Friendly @ \$3.33/ ft² (36" x 150' roll, \$1500)	Solyx @ \$6.15/ ft² (60" x 95' roll, \$2922)
Option 1	93,000	\$427,800	\$309,690	\$571,950
Option 2	28,000	\$128,800	\$93,240	\$172,200
Option 3	60,000	\$276,000	\$199,800	\$369,000
Option 4	12,000	\$55,200	\$39,960	\$73,800

*Cost estimates based on material and do not include labor/installation. Discounts available on large quantities.





Lighting

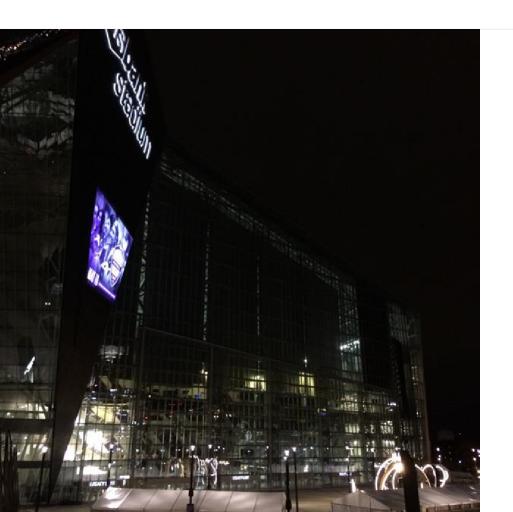
Role at Stadium

- Extensive interior lighting remains visible from outside on all nights
- Purple LED roof lighting

Discussion

- Clearly plays a role, but how large?
- Added benefit of energy savings





Lighting

Collision reduction opportunities

- Revisit lighting protocol
- Target additional Lights Out measures during the first hours after sunset
- Utilize darkening curtains if daytime use does not increase collision risk
- Avoid roof lighting during peak migration



Vegetation

Role at Stadium

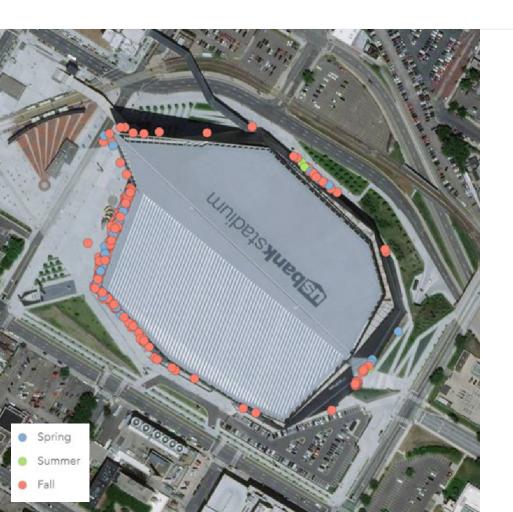
- Stadium landscaping, Commons Park, and Mississippi River corridor
- Increased bird activity
- Increased habitat reflectance

Collision reduction opportunities

- Treat glass where vegetation is near and/or reflected in the glass
- Future landscaping should feature plantings low in height and extent
- Treat glass vs. reduce vegetation





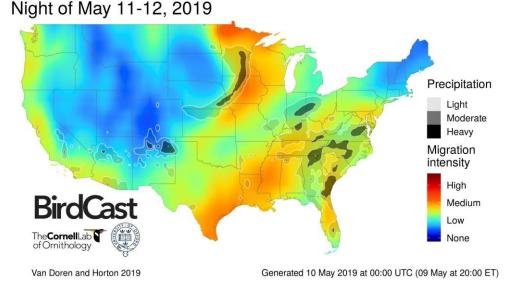


Weather & Seasonality

Role at Stadium

- Highest rates of collisions occur during spring and fall migration
- Collisions associated with favorable migration conditions (e.g., tailwinds) early in the night
- And poor conditions (e.g., headwinds, low clouds, and precipitation) later in the night





Weather & Seasonality

Collision reduction opportunities

- Prioritize Lights Out measures during peak migration periods
- Utilize BirdCast migration forecasts
 with local weather forecasts
- Minimize roof lighting during migration and avoid use on nights with inclement weather and high migration



"By bringing together Stadium management and University researchers at the outset of the project, the study sets a precedent for positive buildingowner/manager involvement in research."



Us bank stadium

MSFA BOARD MEETING -NOVEMBER 15, 2019 - ASM GLOBAL UPDATE

TABLE OF CONTENTS

3

OVERVIEW

OVERVIEW

1-1



MSFA Board Meeting - ASM Global Events Update November 15, 2019 John Drum, Interim General Manager

HOLIDAY BOUTIQUE

November 8 - 10

MSHSL Football Semi-Finals: November 14 - 16

MSHSL Prep Bowl: November 29 - 30

Monster Jam

December 14, 2019 & February 15

 Great Seats Still Available! Visit <u>www.ticketmaster.com</u> to purchase tickets or purchase directly from the U.S. Bank Stadium Ticket Office



Plastic Little

BREETHIN

T

us bank stadium

0000

1 9

s bankstadium

La Comp

Science. Applied to Life."

LA ALAU





Fai FS1 @Toyota

2020 DI Men's Wrestling Championship

March 19 - 21

First time to be held in a Stadium!

MADISON SQUARE GARDEN

Please visit <u>https://www.minneapolis.org/ncaa-wrestling-championships/</u> for more

information!



NCAA Wrestling Championship Schedule

2020 DI WRESTLING CHAMPIONSHIP SCHEDUL

THURSDAY, MARCH 19				
<u>Time</u>	<u>Event</u>			
ТВА	Gates open			
11 a.m.	Session I			
ТВА	NCAA Wrestling Fan Festival			
ТВА	WIN Magazine Memorabilia Show			
ТВА	USA Wrestling Practice			
ТВА	Gates open			
6 p.m.	Session II			

FRIDAY, MARCH 20

<u>Time</u>	Event
ТВА	Gates Open
10 a.m.	Session III
ТВА	NCAA Wrestling Fan Festival
ТВА	WIN Magazine Memorabilia Show
ТВА	USA Wrestling Practice
ТВА	Semifinals Preview Show
ТВА	Gates open
7 p.m.	Session IV

	SATURDAY, MARCH 21			
	<u>Time</u>	Event	Ī	
	ТВА	Gates open	ι	
	10 a.m.	Session V	ι	
	ТВА	NCAA Wrestling Fan Festival	1	
	ТВА	WIN Magazine Memorabilia Show	1	
	ТВА	USA Wrestling Practice	F	
	ТВА	USA Wrestling Autograph Sessions	F	
	ТВА	Gates open	ι	
	ТВА	Parade of All-Americans	ι	
	6 p.m.	Session VI	ι	

*All times are local, central. All times, events, and lo

TOURS

The stadium tour program welcomes guests from around the globe including local, regional, national and international tourists.

- November 19 27
- December 1 6; 18 20; 22; 26 28

For additional tour information visit;

https://www.usbankstadium.com/tours/public-tours

or to purchase tour tickets visit

www.ticketmaster.com

····· ····

stadium

A. 18

VII.

-

EVENT PORTFOLIO

SHOW CONCERTS TOURS RECEPTIONS NOLIDAATE TOURS RECEPTIONS NETWORKING EVENT BAR MITZVAH FUNDRAISER FOR YOUTH SPORTS PROBS RETIREMENT PARTY SOCIAL EVENTS ANNUAL MEETING SOCIAL EVENTS REHEARSAL DINNER RELIGIOUS GATHERINGS FESTIVAL FARTY SHOWS RELIGIOUS GATHERINGS FESTIVAL CHAPTER CHAPTER CHAPTER RELIGIOUS GATHERINGS FESTIVAL CHAPTER GRADUATIONS CHARITY WALK/RUN EMPLOYEE OUTING BREAKFAST MEETING INLINE SKATING REUNIONS WEDDINGS

Employment Opportunities

- Current Openings with ASM Global:
 - Director of Facility Accounting
 - Guest Experience Representative
- Additional opportunities with one of our Stadium partners:
 - Aramark Food & Beverage;
 - Maingate Retail;
 - G4S 24/7 Security; and
 - WESS Event Security
- <u>https://www.usbankstadium.com/con</u> <u>with-us/employment</u>

SKOLZZIKINGS



51

41.08

