## Operational Issues During a Pandemic





### Introductions

Ronald W. Richardson, AIA, Speaker

- Vice President, FGM Architects

Lyndl Schuster, CSBO, Speaker - Asst Supt for Business Services, River Trails SD26

**Dan Whisler, CPS, CPMM**, Speaker - Director of Buildings & Grounds, River Trails SD26

### FGM ARCHITECTS









### "Lessons Learned" Agenda

- Operational overview
- Space Planning
- Cleaning and ventilation considerations





### **Working with Health Departments; Metrics**

Stakeholder Committee to Determine Metrics

| Instructional Model | Case Rate per<br>100,000 | Positivity Rate |
|---------------------|--------------------------|-----------------|
| Remote              | >175                     | >8%             |
| Hybrid              | 70-174                   | <8%             |
| In Person           | TBD                      | TBD             |





### Schedule

### **Decision Making Criteria:**



### Hybrid AM & PM

### Elementary 8:30-11 am and 1-3:30 pm Middle School 7:40-10:40 am and 11:55-2:55 pm





### **Working with Health Departments; Metrics**

https://www.dph.illinois.gov/countyschool?county=Cook

| Week        | Regional Case Rate | Regional % Positivity<br>Rate |
|-------------|--------------------|-------------------------------|
| 9/6-9/12    | 110                | 6.10%                         |
| 9/13-9/19   | 77                 | 5.80%                         |
| 9/20-9/26   | 89                 | 4.60%                         |
| 9/27-10/3   | 97                 | 5.10%                         |
| 10/4-10/10  | 98                 | 4.80%                         |
| 10/11-10/17 | 129                | 5.60%                         |
| 10/18-10/24 | 188                | 7.10%                         |
| 10/25-10/31 | 226                | <b>8</b> %                    |





### Curriculum

- Started in Remote Learning
- Transferred to Hybrid
- Ability to go back and forth between Remote & Hybrid
- Technology Major Expenditure \$160,000
  - Chromebooks for all
    - Additional Cases
  - Hot spots for low income that need these
  - Software
    - Schoology, SeeSaw, Screencastify, Kami
    - EdPuzzle, Newsela
    - Zoom, Google Enterprise for Education, Teamviewer, Rival5 Call Masking
  - Hardware
    - Jabra speaker/microphones/powered USB hubs/docking stations
    - Additional Document Cameras to support remote learning, Webcams
    - UV disinfecting cabinets





### **Transportation**

- Partnership with Transportation Company
  - 37% payment while in remote
    - Assistance with food and supply distribution
    - Special ed routes
  - Added drivers and routes for midday to accommodate hybrid schedule
  - Consolidated routes to keep the costs within budget





### **Food Service**

- Summer Emergency Feeding Continues through June
  - 7 breakfast and 7 lunches
  - Includes 1-gallon milk per student and fresh produce



**ILLINOIS ASBO** 

CTFD

2020 VIRTUAL CONFERENCE



(Ē)





• Modified plan supports 325 students

2020 VIRTUAL CONFERENCE

• 2019 enrollment- 410

**ILLINOIS ASBO** 

• 21% capacity reduction













### Ventilation

- A lot of mitigation options out there but we need to be pragmatic
  - -Long term implications unknown
- Increase air flow throughout the building
- Isolation areas (negative pressure)
- Increase outside air. What % are we delivering?





### Cleaning

- You can't clean touch points often enough. Create and publish a schedule and staff it.
- It's best to reduce touchpoints when possible
- One step cleaning / disinfecting products are more practical.
- Electrostatic Sprayers reduce cleaning time and effectiveness.
- Covering or eliminating unused items allows cleaning efforts to be focused on contact areas.





## Introductions

**Doug Renkosik, CPMM**, Speaker - Director of O&M, Huntley SD 158

Steve Kowalski, Speaker

- Business Development Manager, Performance Services

Aaron Raftery, Speaker - Account Manager, Trane Technologies











## **Preparing for Student Return**

**ILLINOIS ASBO** 

A Lot of Information Coming Your Way

Break it Down into Manageable Parts

Challenges and Assessing your Needs- Doug

Indoor Air Quality / Ventilation – Aaron

Putting a Plan Together - Steve





### Assessing you School District's Physical Plant Needs

**ILLINOIS ASBO** 

Space Utilization

Supply Chain Management

PPE training for first responders to a Covid incident

Enhanced Cleaning Plan During occupancy Overnight

Enhanced ventilation and HVAC management





## **Growing Body of Knowledge**

#### WHAT WILL IT COST TO REOPEN SCHOOLS?

This document estimates some of the expenses school districts may incur in response to the COVID-19 pandemic and as they plan to reopen for the 2020-2021 school year. These calculations assume the statistics of an average school district with 3,659 students, 8 school buildings, 183 classrooms, 329 staff members, and 40 school buses (transporting at 25% capacity, or 915 students, to comply with recommended social distancing guidelines).





External Reference renze: Kangding K-12 Reopering, A Collaborative Planning Process?" National Council on School Racittics, Viorning Document, May 2020. Viver Yay Rees as Shortage Viorsens; "Thomas McKathon, School Star Reer Moganine, November 2018. Districts, Student Frontiemerk by Starte and Metrio Array. "Sciencing The Future of States and Localistics, eRepublic, Accessed june 2020.

| Contest to Desce Contol<br>CONTEST International Acade   | and Provention  | Doministra - O.<br>Automotion - O.   |  |
|--|---|--|--|
| ecterations Disease 2019 (1  | Jon Bright  |  |  |
|  |   | 60000  |  |
| Annual Contract (1995)<br>Recyclement  | Cleaning and Disinfection for Comm  | unity Facilities   |  |
| ay ngi ana   | Interim Recommendations for U.S. Community Facilities with Sc<br>Dimension 2019 (COVID-10)  | specied/Confirmed Coronavirus  |  |
| Trong to the second sec | She (any age 7 - Alex Sign  |  |  |
| Annual  | Summary of Report Changes   | or country   |  |
| Lights A Costs   | and a second state on a new second  | Series and   |  |
| and a value seed come -  | <ul> <li>Added galaxies and with the length distribution at the a<br/>automatic continued constants care</li> </ul>   | administration of the second s |  |
| - and the second   | Broking analysis 108/1200<br>- Update sudmost for deriver and dearlier on of solv corpus surface  | Realing an Welche be Aller<br>Network Reported Carl and to   |  |
| wel -  | <ul> <li>Operation in a to be write proved counting at<br/>Access provide the double counting and access and<br/>Access provide the double counting and access<br/>Access provide the double counting access<br/>Access provi</li></ul>   | Nor COND 10 How Row Is the<br>NETV   |  |
| - recently As well Sometry in  | <ul> <li>Opciale concerning and Alterning parts or</li> </ul>   | course Cross and Cross Rev   |  |
| Dens Sensiti Case Server   | Decision  | An end Patrick of Splanning Phy-<br>an Bard Hg, Jones  |  |
| Partylene:   |   | Account Consensions for<br>any operations  |  |
| within the second in   | respective descendence (1991) (1) for the second respective between the second se  | NE GRONE<br>Annual Maria   |  |
| Autobycansk +  | Sequence an one data consists within adducts Sect. In a spectra strategies of<br>the workshold of the first strategies in the same distance of the<br>sector of the sector of the sector of the sector of the sector of the<br>sector of the sector of the sector of the sector of the sector of the<br>sector of the sector of the<br>sector of the sector | court us reprint y droplets but dieses   |  |
| a vanaenan   | configuration and well will be an an intervent lower stress and the mean state water of the stress<br>programming a second stress from any other ways and the datest lower for datest response  | concernent and concernently through  |  |
| All Segure +   | aggested of WWM for 2 may mode status for heres in days areas have not  | have a highlight of the first set  |  |

ASĤRAE

What is the issue? Late in 2016, bits a septence of a large outbreak of a navel contraints called SAM2-CoV-2 that caused the repertative decade COVID-16, that a seampdate by the Violat Health Organization (WHC) and Concern for Decade Convert and Prevention (CoC) over that this new rules that frameworks characteristics at similar type or it magnitude to a visu that caused a global outbrank in SOU2-2003 (SAM2). That caustrais a cloud of and framework and frameworks and Concerning the section of the

26 countries that occurred mostly in healthcare settings.<sup>1</sup> In contrast by the end of January 2020, Riou

Early hypotheses based on the genetic composition of SARS-CoV-2 were that it originated in bats and Lary report sees based on the gives composition in such 2, Lor 2, we ret in granter in these and built of the set of the of SAR-box in 2,000 and construct on the set of the set of the set of the available of the set of the developed into a particle of the set of the set of the set of the developed into a particle of the set of the set of the set of the developed into a particle of the set of the set of the set of the developed into a particle of the set of the set of the set of the developed into a particle of the set of the set of the set of the developed into a particle of the set of the set of the set of the developed into a particle of the set of the set of the set of the developed in the particle of the set of the set of the set of the developed in the particle of the set of the set of the set of the developed in the particle of the set of the set of the set of the developed in the particle of the set of the set of the set of the developed in the particle of the set of the set of the developed in the particle of the set of the developed in the particle of the set of the developed in the set of the set of the developed in the set of the set of the developed in the set of the set of the developed in the set of the set of the developed in the set of the set of the developed in the developed int

and Althaus precipted both human-to-human transmission of COVID-19 and the ensuing pandemic and on a subjective dominant schaft an instantiation of control of an ensuing a terms of Cer February 16, WHO dotted with COVID-19 autoreasis a Public Network Immigrancy of International Concern (PHDIC), On Network 12, 2020, WHO produced COVID-19 a pandomic. At that time there were than 13, million COVID-19 cases workswee and early dealth. By grant April 2020, there were more than 13, million COVID-19 cases workswee and early dealth. By grant April 2020, there were more than 13, million COVID-19 cases workswee and more than 80,000 dealths.

Environmental Health Committee (EHC) Emerging Issue Brief

Pandemic COVID-19 and Airborne Transmission

Transmission of coronavirus occurs much more commonly through respiratory droplets than through objects and surfaces, like doorknobs, countertops, keyboards, toys, etc.,

A June 1, 2020, update from the CDC provided the latest information to the public regarding the ongoing understanding of how the virus spreads.

#### Changes to building operations, including the operation of heating, ventilating, and airconditioning systems, can reduce airborne exposures.

**ILLINOIS ASBO** 

#### **@6**

Concerns surface on school ventilation as health officials now recommend hybrid learning

#### FIRST OPINION

Ventilation should be part of the conversation on school reopening. Why isn't it?

By ALEXANDRA FEATHERS / AUGUST 5, 2020

#### EDUCATION POLICY CORONAVIRUS AND SCHOOLS

AUGUST 20. 2020 • 11:06AM

DI ODIDU LONG

😏 🔁 🕂 🕇 🕻 16.4K 😰 🤇 1 👌

2020 VIRTUAL CONFERENCE

#### School Ventilation Must Be **Addressed in Reopening Plans**

IAQ is important for school preparedness strategy



## **Setting Priorities**



#### Indoor Air Quality Assessment

- Fact based, data-driven analysis of school building's indoor air quality
- Align to latest CDC and ASHRAE recommendations for operating HVAC systems during an epidemic
- Recommend ways to improve IAQ today
- Highlight opportunities for future improvement



#### Why an IAQ Assessment?



#### Confidence

Students, employees, parents want to know administrators are preparing facilities for safe return to in person learning



#### Resilience

Today it's a global pandemic, but IAQ is likely an ongoing priority for school buildings



#### **Sustainability**

Ensure clean indoor air efforts are in tune with health and sustainability goals





## Four Key Pillars of IAQ



Increase ventilation with outdoor air

**Keep local** exhausts running

Control indoor humidity

cleaning technology as appropriate





## **IAQ-Related Recommendations**

### Dilute

- Disable demand-controlled ventilation (DCV)
- Raise minimum outdoor-air damper (or airflow) setpoints
- Operate air-handling equipment with 100% outdoor air (no recirculation), when outdoor conditions allow
- Provide Temporary and Permanent Solutions for additional capacity
- Keep ventilation systems operating 24/7, even if at lower airflows
- Implement pre- and post-occupancy purge sequences to flush building with outdoor air



• Keep restroom exhaust operating 24/7



- Install humidity sensors, update control sequences, or add equipment to maintain indoor humidity between 40% and 60% relative humidity
- Disable discharge-air temperature reset for multiple-zone VAV systems during humid weather
- Ensure hot-water heating system is enabled to provide reheat for humidity control, if necessary

**ILLINOIS ASBO** 



- Upgrade filters to MERV-13 (or higher, if possible) and ensure effective air seals
- Add portable room air cleaners with HEPA or high-MERV filters
- Add ultraviolet (UV) lamps in ductwork, airhandling units, or upper region of the room
- Retrofit air-handling unit with a suitable air cleaning device

CONFERENCE

summary based on the ASHRAE Position Document on Infectious Aerosols, updated 14 April 2020 www.ashrae.org/covid19



## **Creating an IAQ Plan**

### **Customizing for Your Needs**





CONFERENCE



#iasboVC20

## **Creating an IAQ Plan**

#### School Building HVAC Systems Checklist During COVID -19

| Commendations  |
|--|
| Filtration Recommendation  |
| and the interior of air handling uncertainty   |
| t clean coils, drain pans, and the man   |
| #1: Change filters and clean of the state of |
| to manufacturer's instructions   |
| deficiencies preventing the delivery of  |
| Querview of current situation und asse   |
| Uver   |
|  |
| ACTION 1:  |
| <ul> <li>Recommended</li> </ul>  |
| Benefits:  |
|  |
| - territions:  |
| Considerations   |
| and announced particle filtration captioner.   |
| the increased efficiencies and eminate the existing air handling equation  |
| #2: Install filters with inclusion of the limitation of the  |
| greatest extent possible, containing the delivery of proper IAQ in this area.  |
| e and deficiencies preventing the delivery and   |
| overview of current situation and degree   |
| Uver   |
|  |
| ACTION 1:  |
| Recommended  |
| Benefits:  |
|  |
| startions;   |
| Consider allowed   |







## **Creating an IAQ Plan**

### Lean on Your Partners

Create a Team

#iasboVC20

- Verify Current and Future Equipment Needs
- Build an Achievable Plan With Trusted Partners
- Temporary, Short Term, Long Term Solutions





## Introductions

Garrick Grizaffi, Speaker

- Asst. Superintendent Administrative Services, Valley View 365U

**Stuart Brodsky**, AIA, Speaker - K-12 Practice Leader, CannonDesign

**Eric Rogers, CSBO**, Speaker - Director of Finance & Operations, Diamond Lake SD 76



### CANNONDESIGN







### Short Term Preparations due to COVID 19

- Spray sanitizer and toweling in every space that could be occupied
- Developed protocols for everything from Arrival/Dismissal to bathroom breaks and going to/from lunch
- Sanitization protocols for our buses both during and end of day
- Security at every main entrance
- Water bottle filler stations to replace drinking water fountains
- Use of cleaning service personnel as day porters to wipe down high-touch surfaces
- Develop system where students take breakfast & lunch home at end of day for following day(s) to avoid having to pick-up or deliver meals

#### **Environmentally Responsible**



**PathoCide**<sup>®</sup>

#### WHAT TO USE





PathoClean

PathoCide



PathoCide



PathoCide





Desks, chairs, shelving, light switches, walls, sharable objects, and any washable surface

Ð

High touch areas, doorknobs, light switches



Monitor screens, keyboards, electronic touchpoints



#### **HOW TO USE**



Spray cleaner and wipe, then spray disinfectant and let dry or wipe dry.



Spray disinfectant, let dry or wipe dry



Spray disinfectant on cloth, wipe on object

#### Patho



### Food Safe Sanitizer/Disinfectant Kills Wide Range of Microorganisms

### PathoCide<sup>®</sup>

- .02% hypochlorous acid (pH 4.5-6.5)
  - > 99.98% Water
- 100-200 ppm Free Available Chlorine
- more effective than bleach



#### What it controls:

- Bacteria
- Viruses
- Fungus & Mold
- Odors
- Lime & Scale



### **Utilities Required**

- Clean, softened water
  - Water softener included with system
- Standard electrical outlet
  - 110VAC, 60Hz, single phase
- Well ventilated room
  - 。 Floor drain
- Pelletized Salt
  - Locally sourced





### **EMist vs. the Competition**



### Mid-Term Preparations for Return to Instruction

- Install reverse-flow fan filtration in Front office, Nurse's office and Health Waiting Rooms in all schools (Cost)
- Determining optimal settings for FAI and economizers due to desired increase in fresh air exchanges balanced with cold and sub-zero temps

0





# Longer Term Capital Considerations related to Pandemic Mitigation

- Touchless hand dryers and soap dispensers
- Removing and replacing Bradley-type gang sinks
- High pressure flush toilets and aerosolization
- Waterless urinals
- Use of any biometrics needs to be vetted with legal for compliance with Illinois Biometric Information Privacy Act

### **Design for Adaptability**







Key:

Classrooms

Courtyard

Connections



Classrooms (4)















### **Adaptive Cohort Design**



HEALTH SUITE

### **Adaptive Cohort Design**



### **Design for Adaptability Resources:**

ISBE "Starting the 20/21 school year" Part 3

 https://www.isbe.net/Documents/Part-3-**Transition-Planning-Phase-4.pdf** 

Parametric Data Tools:

 https://citiesandschools.berkeley.edu/index.php/c ovid-school-facilities



'UAL CONFERENCE





STARTING THE 2020-21 SCH001 YFAR

**ILLINOIS ASBO** 

## Family and Staff Support

- Family Support
  - New positions Community Liaison
  - New committees Social-Emotional Learning (SEL)
  - Technology support
  - Community meal program
  - Local grant opportunities



**ILLINOIS ASBO** 



## Family and Staff Support

- Staff Training
  - Covid-19 awareness
  - Classroom management techniques
- Insurance Program
  - Mental health and anxiety/depression support
  - Child behavior/learning issues
- Teacher's Union





## **Questions and Answers**

### We thank you for your time!





### **Presenters:**



Eric Rogers, Director of Finance & Operations, Diamond Lake SD 76 (847) 388-2588; erogers@dist76.org

#### **PANELISTS INFO:**

Ronald W. Richardson, Vice President, FGM Architects (630) 574-8730; ronr@fgmarchitects.com

Lyndl Schuster, Asst Supt for Business Services, River Trails SD26 (224) 612-7302; <u>lschuster@rtsd26.org</u>

Dan Whisler, Director of Buildings & Grounds, River Trails SD26 (847) 297-4120; <u>dwhisler@rtsd26.org</u>

Doug Renkosik, Director of O&M, Huntley SD 158 (847) 659-6161; <u>drenkosik@district158.org</u>

Steve Kowalski, Business Development Mgr., Performance Services (630) 750-5560; <a href="mailto:skowalski@PerformanceServices.com">skowalski@PerformanceServices.com</a>

Aaron Raftery, Account Manager, Trane Technologies (630) 203-7007; <u>aaron.raftery@tranetechnologies.com</u>

Garrick Grizaffi, Asst. Superintendent Admin. Services, Valley View 365U; <u>grizaffigc@vvsd.org</u>

Stuart Brodsky, Senior Vice-President, Cannon Design (312) 960-8025; <a href="mailto:sbrodsky@cannondesign.com">sbrodsky@cannondesign.com</a>

Eric Rogers, Director of Finance & Operations, Diamond Lake SD 76 (847) 388-2588; <u>erogers@dist76.org</u>



