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RE: A MESSAGE FROM OUR TEAM – CORONAVIRUS UPDATE

SanUVAire and its CEO are experts in indoor air quality, air purification, filtration, coil disinfection, surface sterilization, and Ultra-Violet Germicidal Irradiation (UVGI) technology. SanUVAire is also the leader in transit industry UVGI applications.

As such, we are issuing this notice to address our existing, potential and pending customers, vendors, and others with respect to the present concerning, overload of pandemic information. We offer our expertise for a better understanding during this time of unknown and we encourage transit industry officials to self-educate to become proactive against future outbreaks.

It is clear that most of us are unprepared for the onset of a pandemic and we scramble to mitigate our chances of infection once the threat is near or more imminent. Transit Agencies (TA) alike are ill-equipped to get to the root of the problem and, once the threat becomes immediate, typically make reactive investments to sanitize vehicles and facilities with futile methods such as power washing, toxic chemicals, and fumigation.

Once in a reactive position, we all generally fight the infectious spread with the use of hazardous chemicals, so much so that our government agencies and organizations even advocate such use through websites, webinars, conferences, and meetings. Currently, the US DOT, FTA, and APTA have held web-based tele-conferences with TA Officials to distribute the proper and most up-to-date information about COVID-19 and to offer instruction and/or guidance on the only known measures for combating the spread; that is, typical enforcement of exercises such as hand-washing, containing sneezes and coughs, staying home, and using certain EPA listed hazardous chemicals known to kill older versions of the coronavirus on contact.

While it is important to act with chemical interference in the moment, it is equally or more important to understand that chemicals disinfect surfaces only when cleaning those surfaces. In other words, when a vehicle is out of service for cleaning, it is disinfected at the time of the cleaning. It is, then, clean and free from harmful pathogens. Once the vehicle goes back into service, the chemicals have already evaporated. There is nothing left or present in the vehicle to prevent or eliminate contamination as the vehicle transports riders to and from destinations throughout the day. The vehicle must be taken out of service again to be disinfected but only to continue in the same cycle. This is why the current coronavirus will continue to spread in epidemic proportions.

This is also why SanUVAire is circulating this memorandum. In order to reduce the spread of this current coronavirus as well as other coronaviruses and harmful pathogens, there must be an application *during* the service of the transit vehicle. UVGI technology is an application that provides this protection.

When UVGI technology is strategically integrated into a transit vehicle, the UV lights will inactivate microorganisms by disrupting their DNA. When the DNA is disrupted, the microorganism cannot reproduce. If the microorganism cannot reproduce, the infectious spread will decrease over time and the pandemic will weaken to a point of containment and control. This is why UVGI is used in CDC facilities, clean rooms, decontamination booths/entrance and exits zones, and places where disinfection and contamination must be highly controlled. All are designed with UVGI technology because, if used properly and purposefully, it conclusively contains the spread of infectious diseases and harmful pathogens.

We at SanUVAire encourage the continued use of the EPA listed chemicals as a critical defensive action taken for the sake of ridership and employees. Inevitably, just like previous coronaviruses, COVID-19 shall be contained as well. However, the facts are and history shows, we are not by any means free from more

pandemics resulting from the spread of viruses, bacteria, harmful pathogens, or other unknown infectious diseases. Accordingly, we encourage TA's to continue obtaining and absorbing knowledge about preventive measures that are proactive and not reactive. UVGI technology is just such a preventive measure that the FTA and all TA's along with APTA should standardize on.

It is important to understand that billions of taxpayer dollars have been and will be wasted on reactive, temporary efforts to fight the spread of viruses such as this current pathogen, rather than invested in proactive comprehensive solutions at a fraction of the cost. This is why we ask you to visit our website and learn more at www.sanuvaire.com.

Other resources:

ASHRAE covers UVGI and its applications in indoor air quality and building maintenance in "Ultraviolet Lamp Systems", Chapter 16 of its 2008 Handbook, *HVAC Systems and Equipment*. Its 2011 Handbook, *HVAC Applications*, covers "Ultraviolet air and surface treatment" in Chapter 62.

Bus Blasted by UV for Disinfection of Coronavirus
UVGI Inactivation of Pathogens – Report Feb 2020
Dept. of Homeland Security – SanUVAire Evaluation
What Does ASHRAE Say About SanUVAire UV Germicidal Lamps
Special UV Light Zaps Germs In Air

January 18, 2019 – Infection Control Today
Study Says Ultraviolet Disinfection 97.7% Effective Against Pathogens

June 6, 2017 – Aerosol Science & Technology Journal
Study of the Performance of Upper-Room Ultra Violet Germicidal Irradiation

October 13, 2015 – Lincoln Tech Blog
Separating Fact from Myth on HVAC UV Light Benefits

March 24, 2011 – Journal of Perinatology
Effect of Enhanced UVGI in the HVAC on Ventilator-Associated Pneumonia in a Neonatal Intensive Care Unit

March 2009 – Centers for Disease Control
Environmental Control – Upper Room UVGI Guidelines

2006 – EPA National Service Center for Environmental Publications (NSCEP)
Biological Inactivation Efficiency of HVAC In Duct Ultraviolet Light Devices

July 21, 2003 – Thomas Industry Update
UV Germicidal Irradiation System Targets SARS in Airstream