



# UNITED INDEPENDENT SCHOOL DISTRICT INFORMATIONAL ITEM

**TOPIC:** Progress Report on ESSER III Funds Project for District Wide Supply & Installation of UV-C

Germicidal Lamps on Air Conditioning Equipment

**SUBMITTED BY:** Manuel D. Menchaca **OF:** Director of Energy & Environmental Management

**APPROVED FOR TRANSMITTAL TO SCHOOL BOARD:** \_\_\_\_\_

**DATE ASSIGNED FOR BOARD CONSIDERATION:** 20 July 2022

The proposed project consists of installing banks of UV-C lamps inside all interior Air Conditioning equipment to disinfect air flowing through the equipment into occupied areas, thus improving the indoor air quality of all our campuses.

CDC recommends as one of the mitigation strategies to improve indoor air quality the use of UV-C lamps installed inside the air conditioning and ventilation equipment to inactivate SARS-CoV-2. Ultraviolet energy inactivates viral, bacterial, and fungal organisms so they are unable to replicate and potentially cause disease.

Please see attached presentation document for your reference.

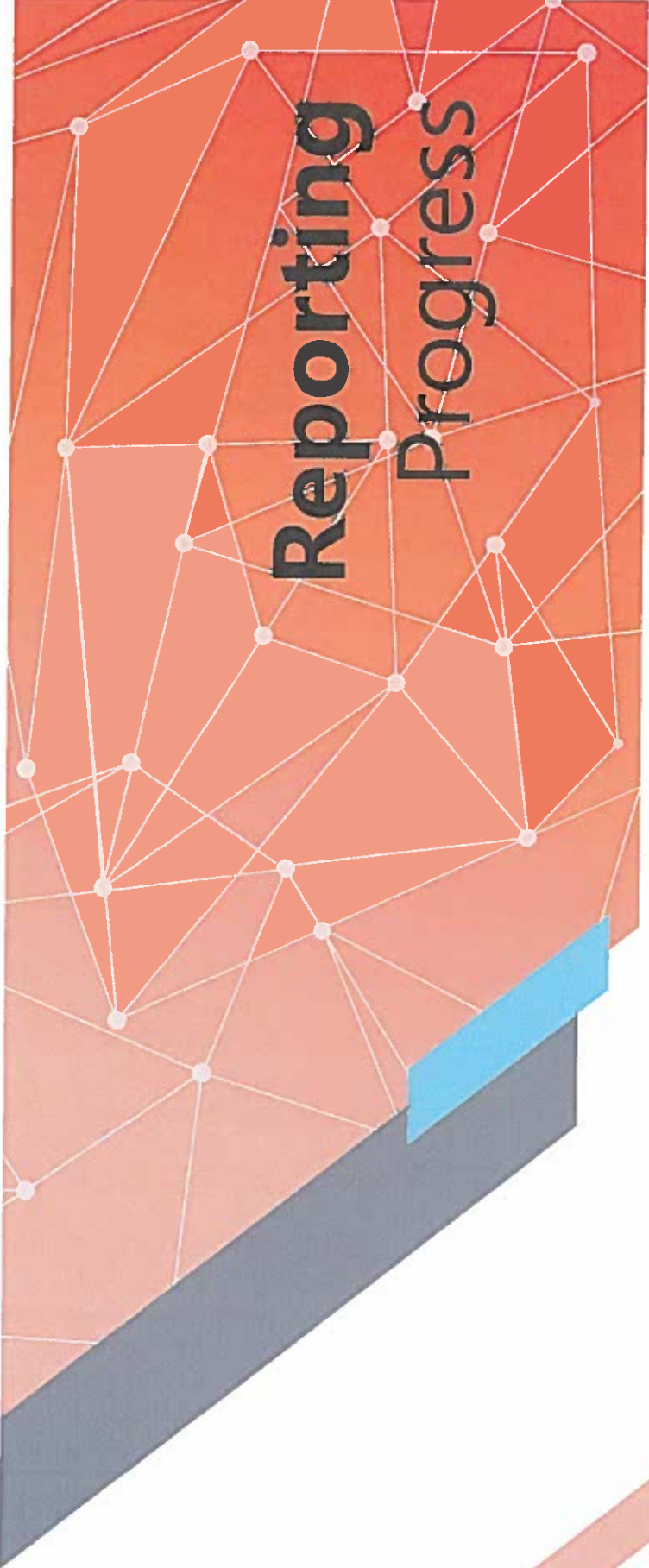
**Budgetary Information:**

ESSER III Funds

Approximate Estimated Construction Cost: \$7,200,000.00

**Board Policy Reference and Compliance**

CV Legal- Facilities Construction



# Reporting Progress

District Wide Supply & Installation of UV-C  
Germicidal Lamps  
For Air Conditioning Equipment

Manuel D. Menchaca

12 July 2022



# Project Overview

- **ESSER Funds proposed to be allocated to finance this important project.**
- The project consists of installing banks of UV-C germicidal irradiating (UVGI) lamps inside all interior Air Conditioning equipment (HVAC) to disinfect air flowing through the equipment into occupied areas, thus improving the Indoor Air Quality (IAQ) of all our campuses.
- The UV-C germicidal irradiation lamps will serve two purposes:
  - 1.) Inactivate up to 90% of the SARS-Co-2 virus in the first pass through the air conditioning unit.
  - 2.) *Disinfect the Air Conditioning equipment thus inactivating mold and bacteria growth resulting in improved air conditioning system efficiency and improved IAQ of all areas occupied by students and staff.*

# Improve IAQ

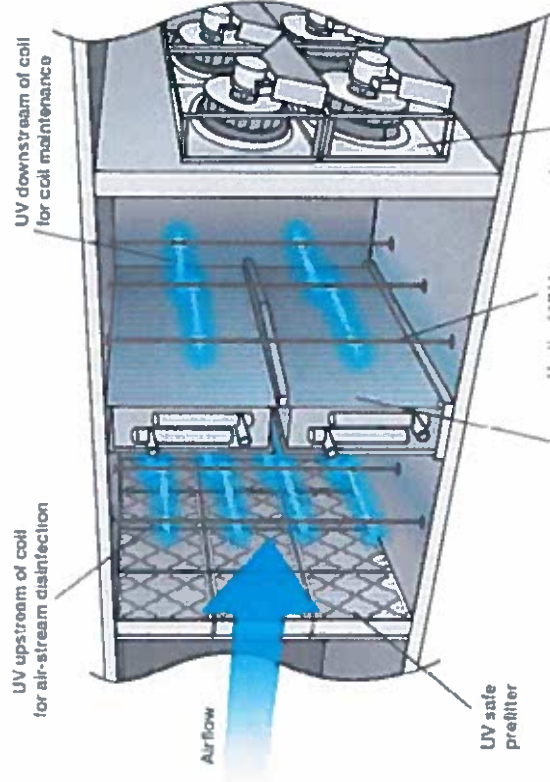
- CDC recommends the following mitigation strategies to improve indoor air quality (IAQ):
  - Increased the introduction of outside air.
  - Improve central air filtration to as high as possible without significantly reducing design airflow. (MERV-8 to MERV-13).
  - Ensure restroom exhaust fans are functional and operating at full capacity when building is occupied.
  - Use portable HEPA fan filtration systems to enhance air cleaning in higher risk areas such as nurse's offices & areas inhabited by people with increased risk of getting COVID-19.
  - **Use UVGI to inactivate SARS-CoV-2 in-duct to enhance air cleaning inside central ventilation systems.**

# TECHNOLOGY

- Ultraviolet energy inactivates viral, bacterial, and fungal organisms so they are unable to replicate and potentially cause disease.
- In-duct air disinfection banks of UV-C lamps will be installed inside the HVAC air handling units positioned perpendicular to the airflow.



# TECHNOLOGY



# HVAC Units Elementary School Campuses

**HVAC AHU Count - Engineering Design of GUVI Lights Project**

Prototype	Elementary Schools		Original Construction		Wall Pack Qty.	AHU Qty.		RTU Qty.
	ES #	Year	Year	Year				
Prototype	1	Arndt	15	1998	0	18	9	0
	2	Cuellar	16	1998	2	18	0	0
	3	Muller	18	1999	10	18	0	0
	4	Zaffirri	17	1998	16	18	0	0
Prototype	1	Bonnie Garcia	20	2004	0	29	2	0
	2	Centeno	21	2004	8	29	1	0
	3	Col. Santos Benavides	22	2005	10	29	0	0
	4	Fasken	24	2005	8	29	0	0
	5	Millam	26	2008	2	29	0	0
	6	Malakoff	23	2005	6	29	0	0
Prototype	1	Freedom	28	2017	0	31	0	0
	2	Roberto J Santos	31	2021	0	31	0	0
	3	Salinas	30	2019	0	31	0	0
	4	San Isidro	29	2018	0	31	0	0
	5	Veterans Memorial	27	2015	0	31	0	0
Prototype	1	Borchers	19	2002	6	33	0	0
	2	Clark	1	1973	0	3	0	15
	3	Juarez Lincoln @ DD H.	6	1989	0	16	0	0
	4	Finley	5	1988	0	15	0	0
	5	Gutierrez	7	1992	2	31	0	0
	6	S.T.E.P. Academy @ J-L	9	1993	0	18	0	0
	7	Karen	10	1993	4	16	0	0
	8	Kennedy-Zapala	13	1995	0	16	0	0
	9	Mallas de Llano	11	1993	11	16	0	0
	10	Newman	2	1980	6	10	0	3
	11	Nye	25	2007	0	29	0	0
	12	Perez	4	1986	5	11	0	0
	13	Prada	12	1994	0	21	0	0
	14	Roosevelt	14	1996	0	21	0	0
	15	Rutz	8	1992	8	21	0	0
	16	Trautmann	3	1982	2	20	0	0
	17	Cherish Center		0	0	4	0	0
32	<b>ES Total:</b>				104	702	12	18
							836	

# HVAC Units Secondary School Campuses

HVAC AHU Count - Engineering Design of GUVI Lights Project

Prototype	Middle Schools	MS #						
1	Gonzalez	9	2002	23	27	0	0	0
2	Los Obispos	7	1996	10	27	1	0	0
3	Salvador Garcia	6	1995	0	27	1	0	0
4	Trautmann	8	1996	20	27	1	0	0
5	Washington	5	1995	20	27	1	0	0

1	Clark	3	1978	0	23	0	0	0
2	Elias Herrera	12	1984	0	43	0	5	5
3	Lamar Bruni Vergara	10	2006	16	25	0	0	0
4	Raul Perales	11	2018	0	30	0	0	0
5	United 6th Grade	2	1971	0	4	0	21	21
6	United	1	1963	17	25	0	3	3
7	United South	4	1991	22	72	0	0	0

12	MS Total:	128	357	4	29
				518	

Prototype	High Schools	HS #						
1	United 9th Grade	5	2017	0	37	0	0	0
2	United South 9th Grade	6	2017	0	37	0	0	0
3	Alexander 9th Grade	7	2018	0	37	0	0	0
4	LB Johnson 9th Grade	8	2019	0	37	0	0	0

1	Alexander	2	1994	12	65	0	0	0
2	LB Johnson	3	2001	8	93	0	0	0
3	United	4	2009	0	118	0	0	0
4	United South	1	1989	8	58	0	0	0

8	HS Total:	28	482	0	0
				510	

	All Schools Total	260	1,541	16	47
				1,864	



# COSTS

## Estimated Costs

- **Total Projected: \$7,210,470.00**
- Project cost: \$6,723,676.00
  - 1,884 Air Handling Units (AHU)
  - Estimated cost per AHU: \$3,568.83
- Engineering design cost: \$486,794.00

# STATUS SUMMARY

TEA pre-approved project on 15 September 2021 as expected.

Engineering design proposal received 27 October 2021.

DBR engineering design contract & PO #22007527 issued 17 Dec. 2021.

Plans & specifications finished on 06 June 2022.

Proposals due 06 July 2022

Project Proposal approval request to UISD Board of Trustees - 17 August 2022

Project start date 16 September 2022

Final completion date 21 September 2023