



# SOUTH SAN ANTONIO INDEPENDENT SCHOOL DISTRICT

## Agenda Item Summary

Meeting Date: November 17, 2021

Agenda Section: Discussion and Possible Action

Agenda Item Title: District Wide Indoor Air Quality (IAQ) Assessment

From: Dolores Sendejo, Deputy Superintendent

Additional Presenters if Applicable: Marc Madorsky, PBK, LEAF Engineers, President

### Description:

IAQ Assessment: LEAF Engineers will perform an inspection of each facility to assess the condition and status including the following item(s):

- Visual inspection of each mechanical air-conditioning unit for proper
- operation noting any adverse effects due to aging, exposure to the weather
- elements, wear and tear, and/or access issues affecting maintenance
- Verification of fresh air damper position and modulating control
- Presence of appropriate air filtration system(s)
- Check of cooling coil condensate pan and drainage system(s)
- Review of mechanical sequences of control for each building

Historical Data: SSAISD Facilities committee has met for visioning and planning for the District Wide Indoor Air Quality (IAQ) Assessment plan (presentation attached).

Recommendation: To approve the District Wide Indoor Air Quality (IAQ) Assessment.

Funding Budget Code and Amount: ESSER III, II \$233,440.00

November 12, 2021

via email



Dr. Marc Puig  
Superintendent  
South San Antonio ISD  
1450 Gillette Blvd  
San Antonio, TX 78224

**RE: District Wide Indoor Air Quality (IAQ) Assessment**

Dear Marc,

LEAF Engineers is thankful for the opportunity to provide this fee proposal for the district wide IAQ assessments in South San Antonio ISD. This letter will serve as our scope of work summary and professional fee proposal.

**Project Scope Description:**

1. IAQ Assessment: LEAF Engineers will perform an inspection of each facility to assess the condition and status including the following item(s):
  - Visual inspection of each mechanical air-conditioning unit for proper operation noting any adverse effects due to aging, exposure to the weather elements, wear and tear, and/or access issues affecting maintenance
  - Verification of fresh air damper position and modulating control
  - Presence of appropriate air filtration system(s)
  - Check of cooling coil condensate pan and drainage system(s)
  - Review of mechanical sequences of control for each building
2. Spot Checks will be included for the following items, and where applicable, further investigation will be initiated:
  - Toilet and general exhaust including science classrooms
  - Elevated temperature and humidity
  - Areas or systems noted as having excessive work orders, comfort complaints, or specific IAQ concerns
  - Examination of air devices and distribution ductwork, supply, and return
  - Evaluation of air handling plenums and potential sources of infiltration
  - Review of local thermostat placement and zoning
  - Confirmation of suitable chilled water system supply water temperatures

3. District Facilities

Name	Total Sq. Ft	Assessment Fee
Armstrong Elementary - Classroom & Gym Buildings	25,624	\$3,075
Armstrong Elementary - Main Building	40,397	\$5,000
Athens Elementary - Cafeteria, Gym, Pavilion Buildings	17,766	\$2,130
Athens Elementary - Care Zone Building*	13,754	\$0
Athens Elementary - Main Building	53,468	\$6,400
Carillo Elementary School - Main Building	57,461	\$6,895

Central Warehouse*	22,108	\$0
District Administration - Gym Bldg Only	18,000	\$2,160
Dwight Middle School - Main Campus	149,617	\$17,950
Five Palms Elementary - Classroom & Gym Buildings	18,516	\$2,220
Five Palms Elementary - Main Building	34,379	\$4,125
Grounds Maintenance Building*	3,700	\$0
Hernandez DAEP - Campus	20,198	\$2,400
House of Worship Church (Old Spec. Ed. Building) - Main*	9,100	\$0
Hutchins Elementary - Cafeteria, Classroom, Gym, & Pavilion Buildings	24,923	\$2,990
Hutchins Elementary - Main Building	55,000	\$6,600
Kazen Middle School - Buildings 400, 500, Wood Shop & Aux Gym	39,791	\$4,775
Kazen Middle School - Main Campus	97,944	\$11,750
Kindred Elementary School - Main, Gym, & Pavilion	70,235	\$8,430
Madla Elementary - Classroom Buildings and Gym Building	19,715	\$2,370
Madla Elementary - Main Building	48,862	\$5,865
Palo Alto Elementary - Classroom Buildings and Gym Building	26,673	\$3,200
Palo Alto Elementary - Main Building	60,653	\$7,300
Parent/Child Inc. Building*	6,000	\$0
Police and Transportation Yard - Police, Bus Wash, & Bus Fuel Buildings	6,357	\$1,200
Price Elementary School - Main Building	68,143	\$8,180
Records Storage Building - 2612 Building*	7,346	\$0
Records Storage Building - 2638 Building*	2,400	\$0
Roy P. Benavidez Elementary - Main Building	106,546	\$12,800
Shepard Middle School - Main Campus	125,691	\$15,000
South San Antonio High School - Auditorium	26,546	\$3,185
South San Antonio High School - Band Hall	18,365	\$2,200
South San Antonio High School - Building E	36,480	\$4,375
South San Antonio High School - Buildings F, ROTC, and Career Ed	92,649	\$11,120
South San Antonio High School - Durbon Athletic Center	46,182	\$5,540
South San Antonio High School - Gym, Girls Field House, & Boys Field House	21,843	\$2,620

South San Antonio High School - Health Science Building	11,866	\$1,425
South San Antonio High School - Main Building	250,741	\$30,000
South San Antonio High School - Stadiums, Main Field House, Weight Room	38,807	\$4,660
South San Antonio High School - Vocational Building	20,691	\$2,485
West Campus High School - Main and Science/Math Buildings	152,791	\$18,350
Zamora Middle School - Athletics Field	1,649	\$1,200
Zamora Middle School - Main Building	125,530	\$15,000

\*Note this building listed for information only, it is to be excluded from the IAQ assessment

4. Assessment Booklet (Deliverable): LEAF will produce a complete written summary of findings, including recommended corrective actions, and estimated costs and priorities associated with work item list for each campus, up to and including HVAC system replacement if applicable

**FEES:**

LEAF Engineers will perform the professional services on the above referenced project for a fee of \$244,975 plus reimbursable expenses related to printing and reproduction of deliverables. Reimbursable expenses will be billed with a 1.0 multiplier (straight pass through without markup) and are not expected to exceed \$1,200 for this project.

**Total maximum not to exceed fee for this project is \$246,175**

Fee Breakdown:

a.	IAQ Assessment Services (Lump Sum)	\$244,975
b.	Reimbursable Expenses (Not to exceed)	<u>\$1,200</u>
<b>TOTAL</b>		<b>\$246,175</b>

**Project Schedule:**

Project Phase	Activity Duration
Site Walks/Field Investigations	100 days
Documentation Development	30 days
Owner Review & Comment Period	30 days
Finalize Report and Committee Presentation	30 days
<b>Total</b>	<b>190 days</b>

**Exclusions:**

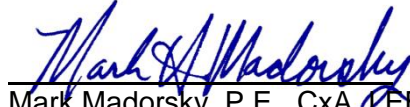
- Mechanical Test and Balance, Materials Moisture Testing, Air Sampling including chemical and/or particulate analysis

Dr. Marc Puig  
South San Antonio ISD  
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Please review this document and let me know what questions or comments the district may have regarding the proposal, professional fees, and services to be provided. There will be no additional services without prior written consent and authorization from South San Antonio ISD. Please return a signed copy to LEAF for our records.

Sincerely,  
**LEAF Engineers**

**Signature,**



Mark Madorsky, P.E., CxA, LEED AP BD+C  
*President*

**South San Antonio ISD Approval**

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

cc: Cliff Whittingstall, Devon Duffin – PBK  
Joe Daher – LEAF Engineers



**South  
an Antonio ISD**

## **FACILITIES COMMITTEE UPDATE**

South San Antonio Independent School District • Facilities Committee Meeting • October 14, 2021





# ESSER FUNDED SCHOOL IAQ Improvements

October, 2021

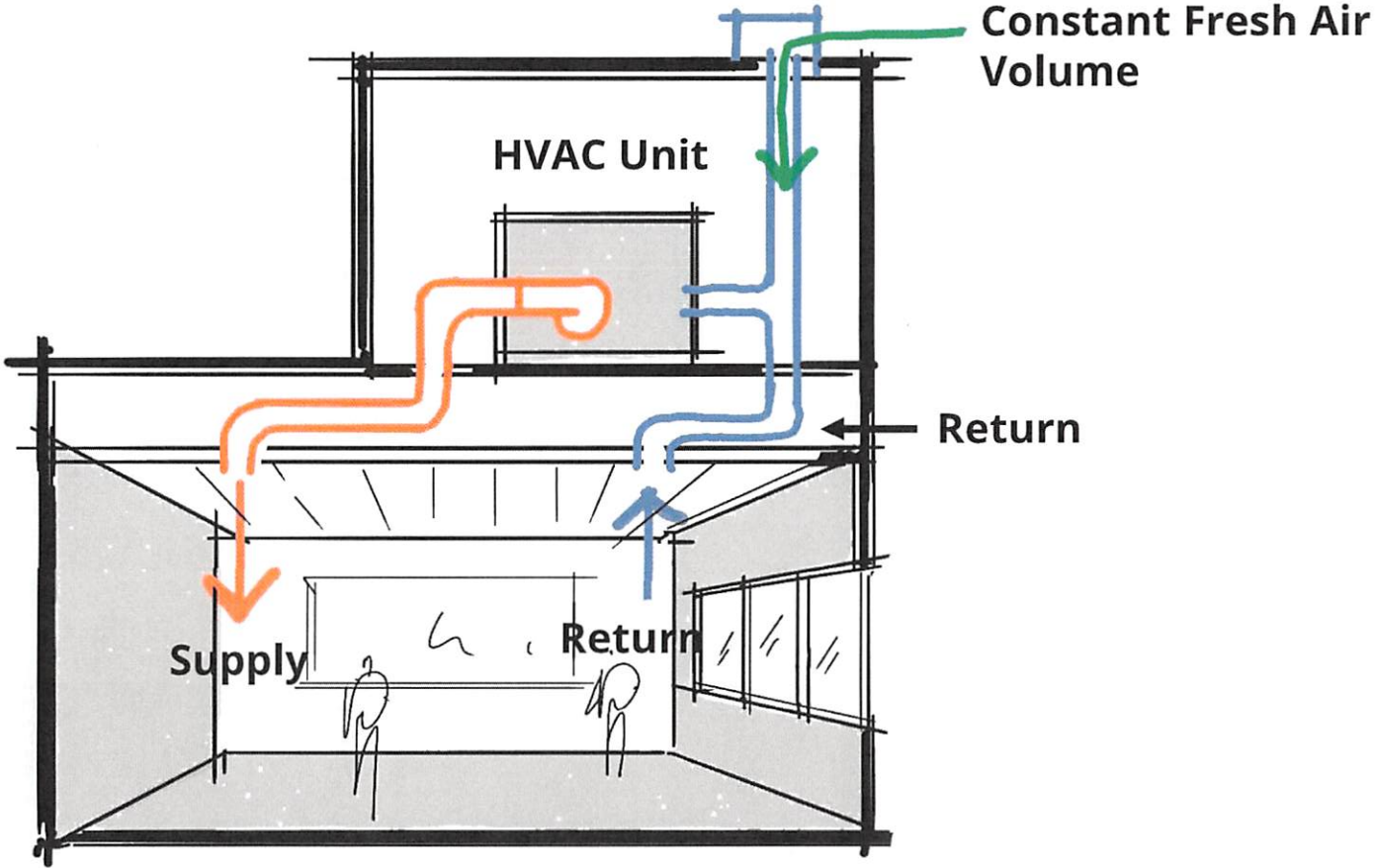


**Mark Madorsky**  
LEAF Engineers \ \ President

## Mechanical Systems and IAQ

- ▶ Germs and virus airborne particles travel through HVAC system
- ▶ Filtration and Fresh Air Dilution Reduce Transmission Potential
- ▶ Active Air Cleaning and Disinfection (Layered Approach)
- ▶ Building Automation Systems/Controls Performance
- ▶ Step One is Investigation and Assessment





# K12 Building Ventilation Performance

- ▶ Outside air (OA) quantities: 10 cubic feet per minute (cfm) per person plus 0.12 per square foot per current building code requirement
- ▶ Indoor air changes per hour (ACH): 4 to 10 per ASHRAE guidelines
- ▶ OA linked to health and learning

Fresh Air / Person in Classroom (OA CFM / person)				
Room	System	Class Population	OA CFM	OA CFM / person
1001 HS	HRU-K1-01	155	2,240	14.5
1002 HS	HRU-E2-01	120	2,210	18.4
1003 HS	HRU-G2-01	185	2,635	14.2
1004 HS	RAHU-B-03	21	350	16.7
1005 HS	FCU-A2-04	21	350	16.7
1006 HS	FCU-A2-05	21	350	16.7
1007 HS	FCU-B1-05	17	350	20.6
1008 HS	AHU-D-01	175	3,800	9.3
1009 HS	AHU-D-02	175	4,200	10.1
1010 ES	AHU-4	395	5,720	12.2
1011 ES	AHU-5	370	4,970	13.0

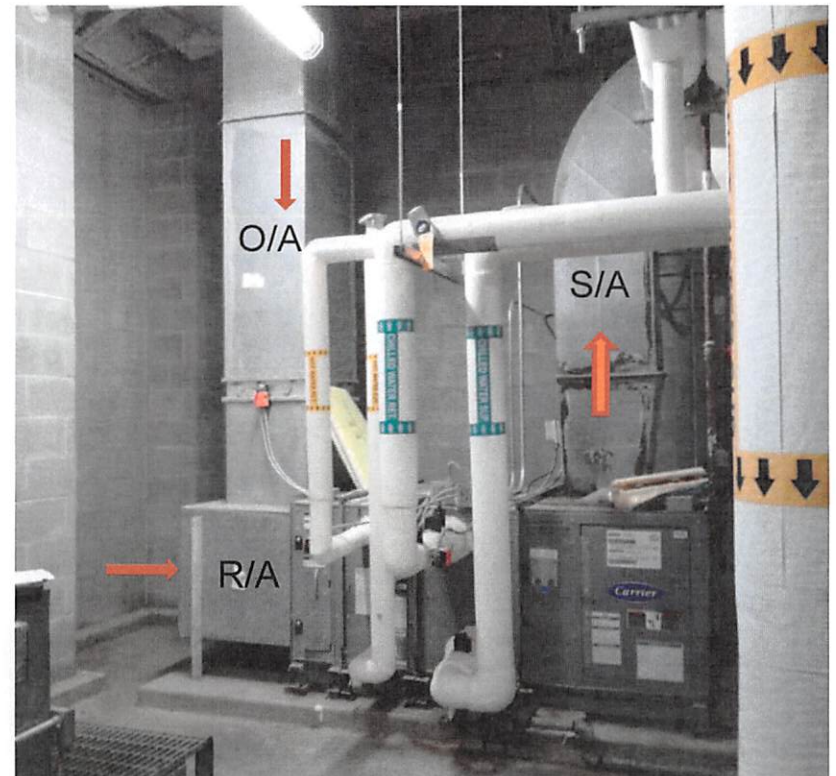
  

Air Changes per Hour (ACH) / Classroom				
Room	System	Zone	Design CFM	ACH / Classroom
1001 HS	HRU-K1-01	FCU-K1-01-01	1000	9.03
1002 HS	HRU-K1-01	FCU-K1-01-02	1000	8.89
1003 HS	HRU-K1-01	FCU-K1-01-03	1000	9.29
1004 HS	HRU-K1-01	FCU-K1-01-04	1000	9.03
1005 HS	HRU-K1-01	FCU-K1-01-05	1000	11.70
1006 HS	HRU-K1-01	FCU-K1-01-06	1000	11.61
1007 HS	HRU-K1-01	FCU-J1-02-01	1000	9.68

# Central Station Air Handling Unit Assessment



- ▷ Fresh Air Dampers Modulating Properly and Sized Correctly
- ▷ MERV 13 Filtration
- ▷ Cooling Coils Engaging Properly
- ▷ Drain Pans and Condensate Systems Free from Standing Water
- ▷ Disinfect HVAC Units As Req'd



## Packaged DX RTU's/Outside Air Units

- ▶ Verify Filter Integrity
- ▶ Confirm Outside Air Damper Operation
- ▶ Inspect Coils for Cleanliness
- ▶ Inspect Drain Pan for Proper Condensate Management



## Air Filters

- ▶ 1", 2", 4" pleated
- ▶ Flat Filter media
- ▶ MERV 13 is the latest and greatest standard
- ▶ Clean and clear, monthly or quarterly if unloaded



# Central Plant Equipment Operation, Settings, & Controls

- ▶ Operate 2-4 Hours Before/After Occupancy
- ▶ 42 Degree Chilled Water
- ▶ Ensure All Boilers are Available and Not Locked Out
- ▶ Honor Dehumidification Calls
- ▶ Enable All Exhaust Fans



## Existing Building Inspection/Investigation

- ▶ Check Discharge Air Temps (target 57 degrees F)
- ▶ Retro-Commission/TAB
- ▶ Air Quality Surveys to Identify Problem Areas
- ▶ I.D. Underperforming Units
- ▶ Add IAQ Data Loggers and Reporting Instrumentation for Temp/Humidity



## Optional Enhanced Air Purification Strategies

- ▶ UV Lighting Section in Air Units (ultra-violet)
- ▶ Bipolar Ionization
- ▶ HEPA Filtration (high efficiency particulate air)







Texas Education Agency  
 Department of Grant Compliance and Administration  
 ARP Act, Elementary and Secondary School Emergency Relief (ESSER) III Grant  
 Total Allocation Amounts (Alphabetical by District)  
 Fiscal Year 2021

# TEA ESSER III Funding Earmark

Region	County District	District Name	Initial Allocation (two-thirds) *	Remaining Allocation (one-third) **	Total Allocation Amount
19	115902	SIERRA BLANCA ISD	163,552	81,776	245,328
05	100904	SILSBEE ISD	3,867,388	1,833,694	5,501,082
16	023902	SILVERTON ISD	204,635	102,318	306,953
08	019009	SIMMS ISD	1,012,861	506,431	1,519,292
02	205906	SINTON ISD	3,443,501	1,721,751	5,165,252
11	049909	SIVELLS BEND ISD	92,702	46,351	139,053
02	013905	SKIDMORE-TYNAN ISD	951,791	475,896	1,427,687
17	152903	SLATON ISD	2,625,821	1,312,910	3,938,731
11	249908	SLIDELL ISD	191,073	95,536	286,609
07	001909	SLOCUM ISD	428,521	214,261	642,782
13	011904	SMITHVILLE ISD	1,621,614	810,807	2,432,421
17	110906	SMYER ISD	474,583	237,291	711,874
06	026903	SNOOK ISD	493,939	246,969	740,908
14	208902	SNYDER ISD	3,305,403	1,652,702	4,958,105
19	071909	SOCORRO ISD	66,157,935	33,078,968	99,236,903
20	015909	SOMERSET ISD	6,689,441	3,344,721	10,034,162
06	026902	SOMERVILLE ISD	970,817	485,409	1,456,226
15	218901	SONORA ISD	838,548	419,274	1,257,822
20	015908	SOUTH SAN ANTONIO ISD	19,147,861	9,573,930	28,721,791

**What can the funds be used for?**

The ARP ESSER funds may be used to address the many impacts of COVID-19 on pre-K through 12 education, including:

Investing in resources to implement CDC's K-12 operational strategy for in-person learning to keep educators, staff, and students safe; improving ventilation; repairing or replacing poorly performing HVAC systems.

**How do I apply for funds?**

The Texas Education Agency has an application for the 2020-2023 ARP ESSER III on their website. TEA confirmed the application process will be the same for this next round of funding as the previous round..

Link: <https://tea4avalonzo.tea.state.tx.us/GrantOpportunities/forms/GrantProgramSearch.aspx>

# SAMPLE ESSER III IAQ PROJECT LIST

Project	Scope	Justification	Project Budget*
38,000 Square foot Pre-K School	Air-Handling Unit (AHU) Replacement	New AHU's will allow ventilation rates to increase and improve air circulation, contaminant filtration, and airborne moisture control	\$936,000.00
85,000 Square Foot Elementary School	Partial FCU (fan coil unit) Replacement, outside air upgrade, exhaust fan replacement	Replacement equipment will mitigate air infiltration, and improve humidity control and fresh air volume throughout	\$1,397,880.00
195,000 Square Foot Middle School	A & B Wing AHU Replacement	New AHU's will allow ventilation rates to increase and improve air circulation, contaminant filtration, and airborne moisture control	\$2,772,000.00
202,000 Square Foot Middle School	2 Pipe HVAC System Replacement, Outside Air Upgrades, Partial FCU Replacement	New 4 Pipe System will improve classroom humidity control and staff/student comfort in all seasons	\$3,600,970.00
198,750 Square Foot Middle School	Hallway/Circulation Corridor AHU Addition	Supplemental Units will increase outside air distribution, and improve humidity control, and infiltration mitigation	\$1,434,000.00

\*Project Budget includes soft costs (A/E fees, mechanical test and balance)

## ESSER FUNDING STEPS

1. ASSESS AND EVALUATE HVAC SYSTEM DEFICIENCIES, WITH BUDGET PRICING
2. INITIATE IAQ CONSTRUCTION PROJECT(S)
3. SUBMIT AN AMENDMENT TO APPLICATION FOR SPECIFIC IAQ PROJECTS WITH APPROXIMATE BUDGET (WITH SOFT COSTS)\*
4. OBTAIN NOTICE OF GRANT AWARD FROM TEA BEFORE PROCEEDING WITH AWARD TO CONSTRUCTION CONTRACTOR

\*Project Budget includes soft costs (A/E fees, mechanical test and balance)