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| <b>LFC Requester:</b> | <b>Liu</b> |
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**AGENCY BILL ANALYSIS  
2024 REGULAR SESSION**

**WITHIN 24 HOURS OF BILL POSTING, UPLOAD ANALYSIS TO:**

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*{Analysis must be uploaded as a PDF}*

**SECTION I: GENERAL INFORMATION**

*{Indicate if analysis is on an original bill, amendment, substitute or a correction of a previous bill}*

*Check all that apply:*

**Original**     **Amendment**      
**Correction**     **Substitute**   

**Date** January 19, 2024

**Bill No:** HB126

|   |  |
|---|--|
| <b>Sponsor:</b> <u>Garret &amp; Chandler</u>                          | <b>Agency Name and Code Number:</b> <u>New Mexico Public School Facilities Authority - 940</u> |
| <b>Short Title:</b> <u>School Ventilation Verification Assessment</u> | <b>Person Writing:</b> <u>Alyce Ramos</u>  |
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**SECTION II: FISCAL IMPACT**

**APPROPRIATION (dollars in thousands)**

| Appropriation |       | Recurring or Nonrecurring | Fund Affected |
|---------------|-------|---------------------------|---------------|
| FY24          | FY25  |                           |               |
|               | 800.0 | Nonrecurring              | General Fund  |

(Parenthesis ( ) Indicate Expenditure Decreases)

Duplicates/Conflicts with/Companion to/Relates to:

**SECTION III: NARRATIVE**

**BILL SUMMARY**

Synopsis:

House Bill 126 makes an appropriation of \$800,000 from the general fund to the Public School Facilities Authority (PSFA), for the purpose of “conducting a statewide public school ventilation verification assessment.” The assessments must “conform with the consensus-based, code-enforceable building standards for reducing the risk of disease transmission through exposure in infectious aerosols and the federal centers for disease control and prevention ‘ventilation in buildings’ performance guidelines.” The funds are to be extended in FY25, and any unencumbered balance remaining at the end of the fiscal year shall revert back to the general fund.

## FISCAL IMPLICATIONS

HB126 would appropriate \$800,000 to PSFA to conduct school assessments of the HVAC systems. This amount is insufficient to fund a significant number of school assessments in the state.

The cost of a school HVAC ventilation assessment per school will depend on the size of the school. Below are estimated potential costs to complete the ventilation verification assessments, based on ranges of actual school sizes in New Mexico.

### Estimated Potential Costs for Ventilation Verification Assessments for all NM Schools:

| School Size<br>(Gross Square Feet) | Number<br>of<br>Schools | Estimated Cost of Assessment<br>per School at \$0.40 per SF | Total Estimated Cost  |
|------------------------------------|-------------------------|---|-----------------------|
| 0 – 50,000 GSF                     | 217                     | \$2,000 To \$20,000   | \$2.7 M               |
| 50,001 – 100,000 GSF               | 358                     | \$20,000 - \$40,000   | \$9.9 M               |
| 100,001 – 200,000 GSF              | 123                     | \$40,000 - \$80,000   | \$ 6.3 M              |
| 200,001 - 490,000 GSF              | 50                      | \$80,000 - \$196,000  | \$6.1 M               |
| <b>Totals</b>                      | <b>743</b>              |   | <b>Up to \$25.0 M</b> |

There are approximately 62,000,000 gross square feet (GSF) of existing public school buildings in New Mexico, across 743 schools (excluding charter schools in privately owned facilities). Analysis of the potential degree of assessment required for HB126, PSFA has determined an estimate of at least \$0.40 per square feet to complete a qualified HVAC assessment of New Mexico public schools.

Assuming a cost \$0.40 per square foot to conduct an HVAC assessment, approximately \$25M would be needed to complete ventilation verification assessments of all 743 schools in the state. This endeavor to accomplish assessments of all New Mexico schools would take multiple years to complete, depending of the staffing load.

The HB126 appropriation of \$800,000 would allow for approximately 2 million square feet of school facilities to be assessed, equating to 3% of the total GSF of all schools in the state.

## SIGNIFICANT ISSUES

### HVAC Assessments

The American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) defines heating, ventilation, air conditioning (HVAC) systems as the equipment, distribution systems, and terminals that provide, either collectively or individually, the processes of heating, ventilating, or air conditioning to a building or portion of a building. Systems may include, but are not limited to: heating systems, cooling systems, central air conditioning systems, ductless mini-split systems, window units, radiant cooling, fans, evaporative coolers, packaged systems, boilers, heat pumps, air ducting systems, etc. Sub components may also include: humidity and carbon monoxide detectors and sensors, air blowers, condensers, evaporative coils, electrical wiring safety devices, system controls (simple to complicated), and more.

Due to the broad spectrum and complexity of HVAC systems in New Mexico public schools, it

is necessary to have qualified persons conduct high level HVAC system evaluations to determine the condition, age and reliability of components and sub-components leading to retrofitting or replacement of systems for improved operation. A qualified HVAC assessment team may include the following qualified individuals:

- Journeyman, Sheet Metal (JSM)
- Mechanical Engineer (ME)
- Electrical Engineer (EE)
- Controls Engineer (CE)
- Commissioning Authority (CxA)

For a qualified HVAC assessment team to complete a thorough ventilation verification assessment at a school site, a week to a month of field and office time would be required, depending on the size of the school.

Analysis of the potential degree of assessment required under HB126, PSFA has determined an estimate of \$0.40 to \$0.50 per square feet to complete a qualified HVAC assessment only for New Mexico public schools.

#### Existing PSFA HVAC Data:

The PSFA conducts assessments of all school facilities in the state, which is on a current cycle of approximately 5 years. These assessments collect data on schools' building systems, limited to overall age and condition, as visually observed by PSFA assessors or reported by the school or district. Therefore, PSFA does not assess schools' HVAC units to the degree this bill requires, or keep detailed inventory and data regarding each individual unit. The data does identify a multitude of problems with schools' overall HVAC systems, which can be used to prioritize capital funding for HVAC upgrades and replacements.

New Mexico school districts obtain Facility Master Plans (FMP) on a five year cycle, which are used as a planning document to prioritize facility needs and capital improvements. This document includes assessments (conducted by FMP vendors) of the facilities and building systems, and identifies needs for HVAC repairs, upgrades and replacements. However, much like the PSFA assessment of facilities, the assessments are typically based on a visual inspection, considering life cycle and physical condition of each system, including HVAC. Some school districts may fund more robust studies of the HVAC systems to be included within the FMP, or as a separate planning document.

#### CDC "Ventilation in Buildings" Performance Guidelines

Per the Centers for Disease Control (CDC) and Prevention, "ventilation" is defined as:

- Indoor air movement and dilution of viral particles through mechanical or non-mechanical (also called natural) means.
- Filtration through central heating, ventilation and air conditioning (HVAC) systems and/or in-room air cleaners (portable or permanently mounted).\*
- Air treatment with Ultraviolet Germicidal Irradiation (UVGI) systems (also called Germicidal Ultraviolet or GUV).\*

The CDC website does not provide specific "guidelines," as indicated in HB126, which makes the requirement for the assessments to conform to the "ventilation in buildings performance guidelines" impossible to do. The website does provide ventilation mitigation strategies, which include: improving air circulation, improving air cleanliness, and achieving sufficient air

changes per hour; each of which have multiple suggestions to help achieve the goal. However, these strategies are not measurable metrics and standards that can be assessed in a school facility.

#### American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

ASHRAE formed in 1959 by the merger of the American Society of Heating and Air-Conditioning Engineers (ASHAE), founded in 1894, and the American Society of Refrigerating Engineers (ASRE), founded in 1904. ASHREA is “a global society advancing human well-being through sustainable technology for the built environment. The Society and its members focus on building systems, energy efficiency, indoor air quality and sustainability with the industry.”

ASHRAE has published 2 recognized standards for ventilation system design and acceptable indoor air quality (IAQ);

1. ASHRAE Standard 62.1 – Ventilation and Acceptable Indoor Air Quality is the most commonly referenced standard to quantify acceptable conditions and appropriate HVAC system design, and
2. ASHRAE Standard 62.2 – Ventilation and Acceptable Indoor Air Quality in Residential Buildings

ASHRAE serves as a source of technical standards and guidelines, and develops and publishes its standards so that AC and refrigeration professionals have access to up-to-date procedures when testing, installing and designing hardware. They provide consistent terminology and information for HVAC professionals. Guideline project committees create standards focusing on areas such as refrigerant emission reduction, building energy conservation, air quality and thermal comfort.

ASHRAE is a proponent of government initiatives on the national, state and provincial level. The organization supports legislature surrounding industry issues, such as energy consumption and building standards. In 2020, ASHRAE developed an Epidemic Task Force to address the COVID-19 pandemic, releasing a set of recommendations for businesses to reduce airborne viral exposure, as well as a set of guidance documents offering ventilation practices for different types of buildings to use.

#### **PERFORMANCE IMPLICATIONS**

HB126 does not define the manner in which PSFA should use the \$800,000 appropriation to achieve the “statewide public school ventilation verification assessment.”

If PSFA were to conduct the assessments itself, the appropriation will be needed to fund the purchase of necessary equipment and assessor training towards qualifications in order to meet minimum standards needed to conduct the higher standards assessments. Additional staff would be needed to focus on this endeavor, while the current PSFA assessors continue the routine assessments public school facilities. Additional staff will require budget approval and additional funding for salaries and resources.

If PSFA were to hire a contractor, with a qualified team of HVAC assessors, the appropriation would fund the maximum amount of school assessments possible. However, PSFA calculates that \$800,000 would only fund approximately 3% of the state’s school square footage. Additional funding would be required to fund additional schools and square footage.

Given that \$800,000 is insufficient to fund a reasonable amount of school facilities, the specific

schools that will be assessed will need to be prioritized. Specific schools or districts could be prioritized and selected based on PSFA's existing data indicating HVAC issues, FMP data indicating the need for replacement, oldest HVAC systems in the state, rural areas only, etc.

Another option would be for PSFA to distribute funding to a small number of districts, due to funding availability, and have the districts hire qualified HVAC assessment vendors to conduct the ventilation verification assessments. Standards for the assessments and reports would be determined to maintain consistency. The completed assessment reports would need to be submitted to PSFA for review and collection.

## **ADMINISTRATIVE IMPLICATIONS**

### **CONFLICT, DUPLICATION, COMPANIONSHIP, RELATIONSHIP**

#### **TECHNICAL ISSUES**

As indicated above in significant issues, the CDC website does not provide specific "guidelines," as indicated in HB126, which makes the requirement for the assessments to conform to the "ventilation in buildings performance guidelines" impossible to do. PSFA believes that the ASHRAE standards for ventilation system design and acceptable indoor air quality (IAQ) would be a more appropriate source and metric to assess to.

As written, HB126 states that the appropriation is intended for PSFA to "conduct a statewide public school ventilation verification assessment," and provides details for that assessment to conform to. This language is unclear. It is assumed that the bill is requiring individual assessments of individual schools throughout the state, as previously required in the 2021 HB232 and the 2023 HB30 bills. However, it could also be read as one assessment of the overall ventilation in schools throughout the state, which would be more aligned with a *study* summarizing the ventilation conditions and needs across New Mexico Schools. PSFA's data on schools' HVAC systems does not support physical measurement to determine if IAQ baselines are met, and would be insufficient to produce a study, without further assessments.

#### **OTHER SUBSTANTIVE ISSUES**

Many New Mexico School districts have taken advantage of federal ESSER funds in recent years to upgrade or replace school HVAC systems. Additionally, several school districts have received Public School Capital Outlay Council (PSCOC) funding to upgrade or replace HVAC systems. Schools that have significantly invested in HVAC projects, and have new systems in good working order, may not require ventilation verification assessments to verify the condition of the systems.

#### **ALTERNATIVES**

#### **WHAT WILL BE THE CONSEQUENCES OF NOT ENACTING THIS BILL**

The appropriation will not be made to PSFA to conduct a statewide public school ventilation assessment.

#### **AMENDMENTS**

**Estimated Cost to Conduction Ventilation Verification Assessment per School District  
(Sorted by Largest to Smallest Sum of Gross Area)**

| District                | Sum of Gross Area (sq.ft) | School Count | Cost to Assess District at \$0.40 per sq.ft |
|-------------------------|---------------------------|--------------|---|
| Albuquerque             | 16,159,630                | 163          | \$ 6,463,852                                |
| Las Cruces              | 4,039,735                 | 39           | \$ 1,615,894                                |
| Santa Fe                | 2,453,238                 | 28           | \$ 981,295                                  |
| Rio Rancho              | 2,437,111                 | 19           | \$ 974,844                                  |
| Gadsden                 | 2,380,401                 | 24           | \$ 952,160                                  |
| Gallup McKinley         | 2,375,633                 | 31           | \$ 950,253                                  |
| Farmington              | 1,695,398                 | 18           | \$ 678,159                                  |
| Central Consolidated    | 1,527,347                 | 16           | \$ 610,939                                  |
| State Chartered Schools | 1,515,404                 | 38           | \$ 606,162                                  |
| Clovis                  | 1,481,352                 | 17           | \$ 592,541                                  |
| Los Lunas               | 1,477,140                 | 16           | \$ 590,856                                  |
| Hobbs                   | 1,448,379                 | 18           | \$ 579,352                                  |
| Roswell                 | 1,329,834                 | 21           | \$ 531,934                                  |
| Carlsbad                | 1,168,068                 | 12           | \$ 467,227                                  |
| Alamogordo              | 1,044,686                 | 14           | \$ 417,874                                  |
| Deming                  | 882,575                   | 11           | \$ 353,030                                  |
| Belen                   | 837,003                   | 11           | \$ 334,801                                  |
| Artesia                 | 835,954                   | 10           | \$ 334,382                                  |
| Lovington               | 770,273                   | 10           | \$ 308,109                                  |
| Grants Cibola           | 748,423                   | 10           | \$ 299,369                                  |
| Espanola                | 715,819                   | 13           | \$ 286,328                                  |
| Los Alamos              | 702,330                   | 8            | \$ 280,932                                  |
| Bloomfield              | 688,612                   | 7            | \$ 275,445                                  |
| Bernalillo              | 622,686                   | 8            | \$ 249,074                                  |
| Aztec                   | 605,309                   | 7            | \$ 242,124                                  |
| Silver                  | 586,994                   | 7            | \$ 234,798                                  |
| Moriarty / Edgewood     | 583,727                   | 6            | \$ 233,491                                  |
| Portales                | 540,633                   | 6            | \$ 216,253                                  |
| Taos                    | 531,457                   | 7            | \$ 212,583                                  |
| Ruidoso                 | 437,995                   | 4            | \$ 175,198                                  |
| West Las Vegas          | 419,327                   | 9            | \$ 167,731                                  |
| Cobre                   | 407,568                   | 6            | \$ 163,027                                  |
| Pojoaque Valley         | 390,533                   | 5            | \$ 156,213                                  |
| Socorro                 | 382,918                   | 6            | \$ 153,167                                  |
| T or C                  | 348,355                   | 5            | \$ 139,342                                  |
| Tucumcari               | 316,006                   | 3            | \$ 126,402                                  |
| Hatch Valley            | 313,086                   | 5            | \$ 125,234                                  |
| Zuni                    | 306,994                   | 4            | \$ 122,798                                  |
| Dulce                   | 306,409                   | 3            | \$ 122,564                                  |
| Las Vegas City          | 303,248                   | 5            | \$ 121,299                                  |
| Eunice                  | 281,862                   | 3            | \$ 112,745                                  |
| Tularosa                | 239,218                   | 4            | \$ 95,687                                   |
| Santa Rosa              | 236,958                   | 4            | \$ 94,783                                   |
| Dexter                  | 228,662                   | 3            | \$ 91,465                                   |
| Estancia                | 216,475                   | 3            | \$ 86,590                                   |
| Pecos                   | 205,336                   | 2            | \$ 82,134                                   |
| Raton                   | 198,394                   | 3            | \$ 79,358                                   |
| Cimarron                | 196,412                   | 4            | \$ 78,565                                   |
| Loving                  | 189,542                   | 3            | \$ 75,817                                   |
| Cuba                    | 186,851                   | 3            | \$ 74,740                                   |
| Jal                     | 178,274                   | 2            | \$ 71,310                                   |
| Jemez Valley            | 176,099                   | 4            | \$ 70,440                                   |

| District                | Sum of Gross Area (sq.ft) | School Count | Cost to Assess District at \$0.40 per sq.ft |
|-------------------------|---------------------------|--------------|---|
| NM School for the Deaf  | 174,390                   | 1            | \$ 69,756                                   |
| NM School for the Blind | 170,743                   | 1            | \$ 68,297                                   |
| Questa                  | 168,483                   | 2            | \$ 67,393                                   |
| Texico                  | 162,898                   | 1            | \$ 65,159                                   |
| Penasco                 | 161,619                   | 3            | \$ 64,648                                   |
| Mora                    | 157,159                   | 2            | \$ 62,864                                   |
| Clayton                 | 155,598                   | 3            | \$ 62,239                                   |
| Lordsburg               | 145,288                   | 3            | \$ 58,115                                   |
| Tatum                   | 144,224                   | 2            | \$ 57,690                                   |
| Hagerman                | 142,676                   | 1            | \$ 57,070                                   |
| Jemez Mountain          | 142,265                   | 3            | \$ 56,906                                   |
| Cloudcroft              | 141,147                   | 2            | \$ 56,459                                   |
| Magdalena               | 137,011                   | 1            | \$ 54,804                                   |
| Mountainair             | 135,217                   | 2            | \$ 54,087                                   |
| Chama Valley            | 128,136                   | 3            | \$ 51,254                                   |
| Capitan                 | 126,149                   | 2            | \$ 50,460                                   |
| Fort Sumner             | 125,771                   | 1            | \$ 50,308                                   |
| Melrose                 | 113,523                   | 1            | \$ 45,409                                   |
| Dora                    | 104,869                   | 1            | \$ 41,948                                   |
| Mesa Vista              | 102,566                   | 3            | \$ 41,026                                   |
| Springer                | 95,154                    | 2            | \$ 38,062                                   |
| Carrizozo               | 93,179                    | 1            | \$ 37,272                                   |
| Animas                  | 91,623                    | 2            | \$ 36,649                                   |
| Lake Arthur             | 89,414                    | 1            | \$ 35,766                                   |
| Logan                   | 88,929                    | 1            | \$ 35,572                                   |
| San Jon                 | 83,728                    | 1            | \$ 33,491                                   |
| Quemado                 | 80,720                    | 2            | \$ 32,288                                   |
| Grady                   | 73,516                    | 1            | \$ 29,406                                   |
| Floyd                   | 70,760                    | 1            | \$ 28,304                                   |
| Corona                  | 65,125                    | 1            | \$ 26,050                                   |
| Hondo Valley            | 64,994                    | 1            | \$ 25,998                                   |
| Vaughn                  | 64,183                    | 1            | \$ 25,673                                   |
| Elida                   | 60,834                    | 2            | \$ 24,334                                   |
| Wagon Mound             | 59,086                    | 1            | \$ 23,634                                   |
| Maxwell                 | 57,557                    | 1            | \$ 23,023                                   |
| House                   | 57,229                    | 1            | \$ 22,892                                   |
| Reserve                 | 56,169                    | 1            | \$ 22,468                                   |
| Roy                     | 53,540                    | 1            | \$ 21,416                                   |
| <b>Grand Total</b>      | <b>62,797,145</b>         | <b>748</b>   | <b>\$ 25,118,858</b>                        |