Attachment A

Project Description - Lighthouse Community Charter High

This HVAC Modernization Project aims to replace outdated, inefficient HVAC systems at the Lighthouse campus and install modern, network-based control systems with CO_2 monitoring and Demand Control Ventilation (DCV). An assessment prepared on 4/8/25 revealed that Lighthouse High School operates 31 rooftop Trane HVAC units, most of which are approximately 16 years old and have exceeded their expected useful life. While the systems have been well maintained, their age has resulted in decreased efficiency, higher maintenance costs, and growing performance concerns. The New equipment will include modern features such as Demand Control Ventilation (DCV), which adjusts airflow based on occupancy to reduce energy use and improve indoor air quality by lowering CO2 levels in classrooms and shared areas.

The installation of network-based controls platforms significantly enhances the management and efficiency of HVAC systems at the campus. They provide remote access, improve energy savings, and offer centralized control and monitoring, leading to optimized energy use, better indoor air quality, and enhanced maintenance capabilities. These technologies are valuable tools for creating a comfortable, healthy, and energy-efficient learning environment.

A smaller, but essential part of this project is roof replacement to maximize energy efficiency and durability.

Project Goals

- Replace aging and inefficient HVAC equipment that has exceeded its expected useful life typically (15–20 years)
- Add economizers and powered exhaust to improve building ventilation, reduce Co2, airborne pollutants and comply with updated title 24 building code.
- Replace aged, dilapidated ductwork to prevent duct leakage, thermal loss and ensure proper airflow to the spaces.
- Implement wireless, network-based HVAC Controls with Demand Control ventilation (DCV) and Zone controllers for proper air distribution and building ventilation. Updated HVAC controls are necessary to reduce energy consumption and maintain adequate space temperatures and air quality.
- Meet or exceed current building code ventilation requirements per ASHRAE 62.1 and California Title 24 Building Energy Standards
- Perform anticipated additional roof repairs deemed necessary after the HVAC work is completed to ensure durability and longevity of building.

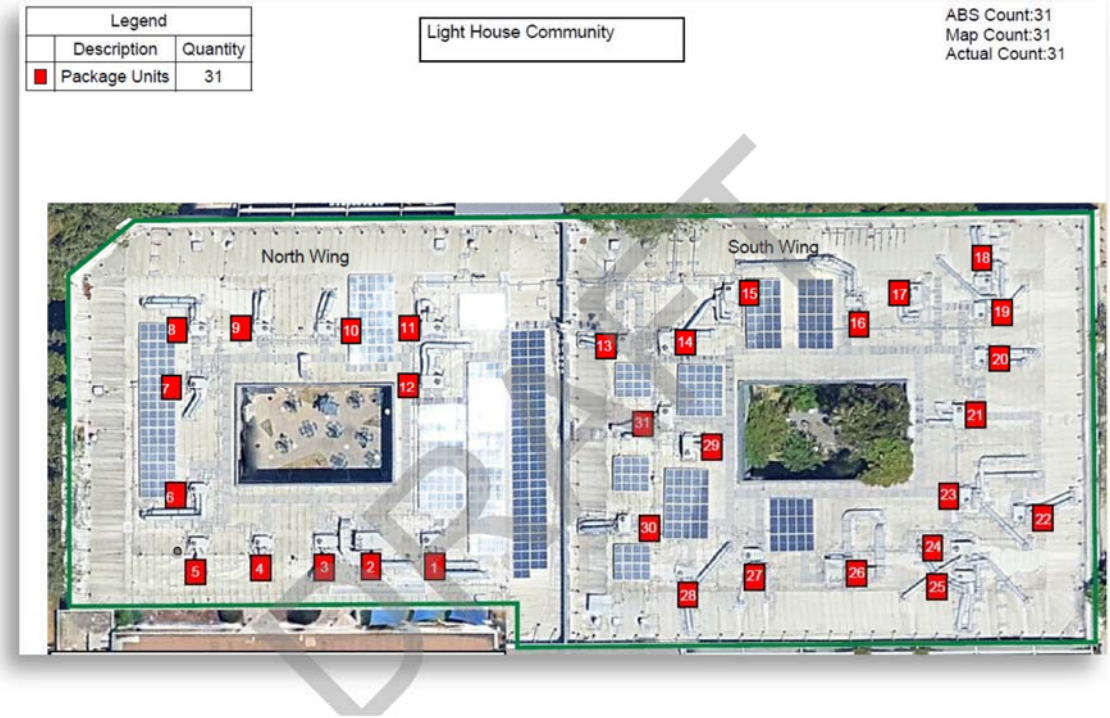
Attachment A

Project Images

Attachment A

2.3 Equipment Locations

The map below shows the HVAC equipment locations. The different colors indicate the different types of units. This particular school only has various different tonnage of Trane Package units.



Location	Project Budget	Unit Count	Tons	Estimated Cost Per Unit/ Ton	Total Cost
Lighthouse	HVAC Unit Replacement Mechanical / Structural Design and Permit Submittal	31		$2,500	$ 77,500
Lighthouse	HVAC Unit Equipment and Installation	31	165	$6,100	$ 1,006,500
Lighthouse	Installation of Economziers and Building ventillation upgrades required for Code Compliance	31		$3,600	$ 111,600
Lighthouse	Remove and Replace Old roof mounted Ductwork, Sheetmetal Flashing ,transitions, sleepers and blocking.	31		$10,400	$ 322,400
Lighthouse	Install Network-Based HVAC Controls With DCV Capability and Zone Controllers	31		$2,200	$ 68,200
Lighthouse	LED lighting, Lighting controls (labor and materials)	33		$2,000	$ 66,000
Lighthouse	Additional roof repairs	NA		NA	$ 300,000
Lighthouse	Permitting and legal expenses	NA		NA	$ 50,000
Lighthouse	Contingency	NA		NA	$ 200,220
	Total Project Budget				**$ 2,202,420**

Timeline

- **Assessment completed**: June 2025
- **Project design and procurement**: Summer/Fall 2026
- **HVAC Installation phase**: Spring – Summer 2027
- **Final commissioning and testing**: By August 2027
- **Roof Installation phase**: Spring-Summer 2028