

**TOWN OF PLYMOUTH CAPITAL IMPROVEMENT PLAN REQUEST
FY26 SPRING ANNUAL TOWN MEETING**

Department: Plymouth Public Schools	Priority #:	18
Project Title and Description: South Ele. Replacement of remaining RTUs and controls	Total Project Cost:	\$2,000,000.00

Department/Division Head: School Facilities - Matt Durkee

Check if project is: New Resubmitted Cost estimate was developed: Internally Externally

For project re-submittals, list prior year(s):

List any funding sources and amounts already granted:

Basis of Estimated Costs (attach additional information if available)			If project has impact on 5 Year Plan and future operating budgets, insert estimated amounts.		
Capital:	Cost	Comments	Fiscal Year:	Capital	Operations & Maintenance
<i>Planning and Design</i>			<i>FY23</i>		
<i>Labor and Materials</i>	2,000,000.00		<i>FY24</i>		
<i>Administration</i>			<i>FY25</i>		
<i>Land Acquisition</i>			<i>FY26</i>		
<i>Equipment</i>			<i>FY27</i>		
<i>Other</i>					
<i>Contingency</i>					
Total Capital	\$2,000,000.00				

Project Justification and Objective: This request will fund the replacement of the remaining RTUs at South Elementary. We have had the current manufacturer's of the existing Roof Top Units Vice President and Regional Sales representative come and provide construction documents to use during the Bid process. REF: MARQUIS Assessment

For Capital Project Requests:

Will this project be phased over more than one fiscal year? If yes, enter it on the 5 Year Plan

Can this project be phased over more than one fiscal year?

Yes No
Yes No

For Capital Equipment Requests:

Check if equipment requested is replacement and enter the year, make & model, VIN and present condition of existing equipment

What is the expected lifespan of this new/replacement equipment: _____

Attach backup information, estimates, or justification to support this request.

Project Scope

We are proposing two solutions for consideration.

Option A is a replacement of the rooftop units in-kind. Due to changes in industry standards, the replacement units will be custom multi-zone units. They are expected to be larger and heavier than the existing units in order to accommodate current refrigerant regulations. This solution is expected to be less efficient but will cause far less work within the building. All existing ductwork and interior finishes will remain in place, and new multi-zone roof mounted units will connect directly to it. Interior disturbances are limited to what is necessary to support the connection to new controls alone.

Option B replaces the existing multi-zone system with a more efficient variable air volume system. It consists of custom roof top units with built-in boilers and water storage tanks that connect to a new VAV boxes for each zone. The existing supply ductwork in the direct vicinity of each unit will need to be removed, and new ductwork will connect the unit to new VAV boxes, which will then tie back into the existing ductwork system. The new roof top units will consistently provide 55°F air to the system and the VAV boxes with hydronic heating coils will modulate the air flow and temperature being delivered to each zone. Zone pumps and valves accessibly located in the roof top unit will work together to modulate the water flow required to support each VAV box. Interior finish disturbances are expected to affect interior ceilings and associated systems (lighting sprinklers etc), directly surrounding each roof top unit. Limited disturbances to support a new controls system are also included here.

Alternates include:

1. Add a built-in boiler, water tank and reheat coils internal to the new rooftop units.
 - a. This alternate is applicable to Option A only.
2. CO2 Controls
 - a. This alternate is applicable to both Options A & B.
3. Repair Unit 8 in lieu of replacement

Base Scope

The renovation base scope associated with each option is detailed below by discipline.

MECHANICAL

Option A – Multi-Zone System

Option B – Variable Air Volume System

Units

Replace units with custom multi-zone roof top units equipped with R410a refrigerant and sized in accordance with the requirements identified in Attachment A. New units shall have a minimum efficiency of 80%. Units shall be by Seasons 4, model TDMZ, with new DDC controls.

Maintain existing unit curb, unless notes otherwise. Provide a curb adapter to transition from the existing curb to the new unit size.

Replace units with custom roof top units each with a built-in boiler and 5 gal. water storage tank. Units and boilers shall be sized in accordance with the requirements identified in Attachment A. New units shall have a minimum efficiency of 96%.

Maintain existing unit curb, unless notes otherwise. Provide a curb adapter to transition from the existing curb to the new unit size.

Water Distribution

None

Connect in-unit water storage tank to the in-unit boiler. Connect boiler to and from each VAV box with a closed loop. Assume an average of 50 LF for each VAV.

Controls

Provide new monitoring system, Supply and return air temperature sensors and space temperature sensors for each zone that allows the new monitoring software to collect live temperature data, this monitoring software

Scope is the same as shown for Option A.

The built-in boiler will limit new piping in the building. The system requires connection from the boiler in the unit to each new VAV box.

The alternate is to connect each VAV box through the building to a central boiler. This option was evaluated and considered too invasive.

The built-in water tank will maintain pressure on the water system, negating the need to connect back to the buildings well-fed potable water system, which has been deemed unreliable by Plymouth Public School Facilities.