



PROPOSED REFERENDUM PROJECT SUMMARY

Base Referendum – Scope of Work

04/15/13

The base scope of work for the proposed referendum include projects identified as critical to maintaining the integrity of the building envelope and restoration of failed mechanical equipment resulting in an improvement to the indoor air quality and increased efficiencies in energy consumption for the HVAC systems. Projects identified as necessary to maintain the anticipated life expectancy of the buildings include:

- A. Steam Pipe Replacement**
- B. Roof Replacement, Two-Story Window Wall Replacement**
- C. Exhaust Fan Repair/Replacement**
- D. Redesign Food Service Facilities**
- E. New Emergency Access Roadway Along Rt. 78 Side of Building**

These projects represent critical building systems which have been compromised over time and require extensive repairs/replacement to restore their integrity. The scope of these necessary repairs/replacement represent projects that are of such a nature and scope as to be difficult to effectively break up into multiple projects and are most effectively executed in total.

A. Steam Pipe Replacement :

The existing steam heat system and piping generally located in the Crawlspace of the original South Building is in extremely poor condition and requires immediate replacement to ensure continued use of the building through the state mandated heating season. The Crawlspace occupies approximately 180,000 SF of space under the South Building with limited access, poor construction space, dirt floors with frequent seasonal flooding and headroom limited to 48" or less. The piping systems have been systematically failing over the past few years and the failures have resulted in excessive wear and tear on the connected HVAC equipment, including boilers, classroom unit ventilators, and blower coil and fan coil units.

The current budget year includes \$500,000 for potential steam piping failures in the next heat season. Previous failures have increased in size and frequency, with extremely difficult access to complete emergency repairs. At this time a reasonably anticipated piping failure runs the risk of losing heat to a full wing or possibly the entire South Building. Loss of heat for an extended period of time during the heat season may result in the complete loss of the impacted facilities.

In the event of a catastrophic system failure, the South Building would not only be left without heat for occupancy as required by code but would also be at risk of losing HVAC equipment, coils and sprinkler systems exposed to below freezing temperatures. On an emergency basis individualized space heaters could be distributed throughout the building to maintain some minimal level of heat but fuel sources are an issue for temporary equipment brought into an occupied public space. Gas service does not exist in the required quantities necessary to heat the building with distribution throughout. Propane tanks are inappropriate for this application and electric service may not be sufficient to serve electric space heaters. An alternative may be to use truck mounted package HVAC units with their own fuel source outside the building which could be ducted into the building to again provide a minimal heat level. However, this would require time to implement and construct the necessary connections and at great expense.

Preventive maintenance measures are currently implemented on the terminal equipment including boilers, classroom unit ventilators, and blower coil and fan coil units. Retubing of the boilers has extended their anticipated useful life expectancy for an additional 15 years. Steam traps and isolation insulation have been replaced systematically to extend their anticipated life expectancy. These units are eight years old, in reasonable working order and are not in need of replacement. In addition, the unit ventilators are scheduled for integration in to the Building Management System which will optimize energy consumption as well as maximize the useful life expectancy.

An engineering study of the existing steam heat system reviewed alternative heat delivery methods including steam and hot water alternatives, as well as the possibilities of boiler conversion or replacement.

Current Conditions:

- Majority of system is 57 years old and original to the building.
- Extensive pipe failures and repairs have been experienced over the past 10 years. Repairs made as necessary on an emergency basis.
- The steam heat system in the South Building currently serves 60 classrooms and department offices housing approximately 1,300 students, (2) gymnasiums, Large Group Instruction, ½ of the Cafeteria seating capacity as well as the Board of Education offices.
- Existing 15,000 LF of supply and condensate piping is completely compromised endangering the heat system.
- Existing pipe insulation missing or compromised causing extreme loss in heat efficiencies.
- Existing steam traps failing causing significant premature failures of the HVAC equipment.
- Extent of degradation of existing steam heat system in the South Building is subject to extensive failures which may result in complete loss of heat and potentially loss of use of the South Building.
- Proposed 2013-14 budget includes \$500,000 earmarked for emergency repairs to the steam heat piping.

Solution:

- The engineering study of the South Building steam heat system performed by Johnson & Urban, LLC recommends the complete replacement of steam supply and condensate piping, traps, insulation, etc. to secure capabilities to heat the South Building.
- The recommendation for replacement is to re-establish the original steam heat system. Payback periods for alternative systems identified in the study were excessive and did not warrant the added construction costs.
- Energy efficiencies will be realized reducing operating costs. It is difficult to quantify actual savings until we know the actual conditions of the current system, and the impact of those conditions on current energy consumption.
- Annual maintenance costs will be reduced with updated equipment and the replacement of failed distribution piping.
- The project may be eligible for financial incentives through the Pay For Performance program administered by New Jersey's Clean Energy Program.

**B. Roof Replacement – South Building:
Roof Replacement – North Building:
Two-Story Window Wall Replacement – South Building:**

Extensive repair and replacement of the roofing systems is required to protect the useful life of the facility and to maintain a safe and healthy environment. The existing roof systems throughout the complex have not been repaired or replaced over the past few years and are in poor to moderate condition. Failures have resulted in structural damage to the roof structure and increased maintenance and replacement costs. In 2011, a roof assessment study was prepared for the District identifying general areas of roof failure and moisture penetration compromising the integrity of the roof insulation.

The roofs on the South Building are generally in excess of 15 years old and are in poor condition and have resulted in structural damage to the building. All roofs on the South building have been replaced and/or recovered previously but current systems have exceeded their reasonably anticipated life expectancy. The poor conditions have increased the necessary replacement costs. Water infiltration has resulted in structural damage to the building and posed potential health hazards to the occupants of the building. Further roofing failures run the risk of additional structural damage to the building and/or environmental contamination of the interior spaces. Both possibilities could result in the loss of instructional spaces and more extensive delays and repair costs.

Previous roof repair projects included recovery and replacement projects of varying degrees. Current thermal scans have indicated extensive failure of the roofing membranes and saturation of the rigid insulation. The condition of the structural roof deck under the failed sections of roof is unknown. At this time full replacement of the roof systems on the South Building is required to secure the building envelope. Additional scope includes replacement of failed fascias and soffits.

The North Building roofs are the oldest on campus, exceeding 20 years old in some areas. Though older, the limited roof penetrations and reduced maintenance access have allowed these roofs to age more effectively. They have not experienced the extensive failures

observed on the South building but are nonetheless ready for replacement or recovery as appropriate.

To restore the integrity of the building envelope we recommend the replacement of the two-story window wall glazing system on the east and west sides of the Stirling Road two-story building to address existing weather related damage. Water and air infiltration have resulted in rain damage and a complete loss of efficiency of the HVAC systems in these spaces.

Previous repairs included limited replacement of windows, spandrel panels and screens along with caulking programs in an attempt to stop the leaks. These band aid repairs have only exacerbated the failures and replacement is required at this time to maintain the useful life expectancy of the structure.

Current Conditions:

- Existing roofing systems have generally exceeded their anticipated life expectancy and are in need of extensive repair or replacement.
- Multiple severe leaks have been repeatedly experienced throughout the South Building resulting in structural damage to the building and exposing the facility to potential health hazards.
- Age related wear and tear has been observed on the North Building roofs indicative of potential failures.
- Existing two-story window wall systems on the east and west sides of the Stirling Road two-story building are approximately 42 years old and have failed resulting in exposure to water damage from rain infiltration and energy loss as a result of excessive air infiltration exposing the facility to potential health hazards.

Solution:

- Complete replacement of remaining roof systems of the South Building and priority areas of the North Building including roof membrane, rigid insulation, flashings and trim.
- Recovery project of salvageable roof areas on the North Building as appropriate.
- Secure the building roof from further deterioration and damage from water infiltration.
- Structural repairs as required especially in the areas of the original 1956 portions of the South Building.
- Complete replacement of the two-story window wall system on both sides of the Stirling Road two-story building including aluminum

framing wall system, windows, spandrel panels, screens and flashings.

C. Exhaust Fan Repair/Replacement:

The HVAC system throughout the South Building was designed with a balance of fresh air in and exhaust out to maintain proper indoor air quality and to temper the air temperature efficiently. At this time 61 of the 176 existing roof mounted fans are inoperative and in need of complete replacement. An additional 69 fans are in need of extensive maintenance and repair to maintain their useful life expectancy.

Our recommendation at this time is the repair and replacement of the failed exhaust fans and utility services to restore the proper HVAC system balance. The results will be improved indoor air quality and decreased energy consumption. In addition, the implementation of DDC controls will reduce energy costs, and help with ongoing preventive maintenance.

Current Conditions:

- Majority of the existing roof mounted exhaust fans are inoperative and in need of repair or replacement.
- Power supply has been compromised in many locations.
- Inoperative fans have negatively impacted the indoor air quality throughout by creating a positive pressure inside the building as a result of the lack of proper exhaust to generate the code required air changes.
- Failed fans have resulted in premature failure of some of the roof areas.

Solution:

- Complete replacement of failed exhaust fans throughout
- Restoration of power circuits where necessary
- Rebalancing of HVAC systems to restore proper ventilation with balanced fresh air intake and exhaust
- Exhaust fan systems and controls will be integrated into the BMS for efficient operation and maintenance

D. Food Service Facility Improvements:

Redesign South Kitchen and Servery:

Redesign North Servery:

The existing food service has occupied every viable space throughout the school and is in need of space relief. The recommendation is to modify the Food Service lines to maximize the serving capacity and to increase the available food options.

Alterations to the food service line would provide more choices and access for food options and at a faster pace, addressing service delays. Aesthetic improvements would coordinate the cafeteria space with the kitchen/server for a more unified appearance.

Upgrades in the South Kitchen would include reorganization of equipment for more efficient contemporary installation. Equipment upgrades would increase menu options. And a ware washing system is needed to accommodate the food service as the old system was abandoned and removed many years ago.

Renovations in the North Cafeteria are necessary to address poor customer flow which results in delays during lunch. The current installation is also limited in menu variety and food options as a result of the existing configuration and space. And the Snack Area is poorly configured with poor monitoring and control and limited utilities. There is no ware washing system for the North Kitchen.

Current Conditions:

- Menu and food options are limited in both the North and South cafeterias as a result of the existing equipment and configurations.
- There are no ware washing facilities in either kitchen.
- Concerns with the state of old equipment with respect to compliance with current health standards.

Solution:

- Redesign of South Kitchen service line to offer more food options while increasing student flow to reduce service times.
- Redesign of North Servery to offer more food options while increasing student flow to reduce service times.

- Replace old failing or useless kitchen equipment with new equipment. Add ware washing facilities in both kitchens.

E. New Emergency Access Driveway Along Rt 78 Side of Building:

Emergency access on the south side of the complex along the Route 78 corridor currently exists as a dirt path. No emergency, maintenance or construction vehicles can reliably access this side of the building without risking damage to the lawn areas or getting stuck in the mud. This is also a major egress accessway leading from multiple points of egress from the South Building to public areas as required by code.

The issue has been identified by the local Fire Marshal as a critical need with respect to life safety issues for the complex.

Current Conditions:

- Existing vehicle access on South side of complex along Route 78 is limited to an existing dirt path.
- Existing egress path on this side of the South Building is across an unmaintained lawn area which is frequently subject to excessive wet conditions making it unusable for safe egress. It is also not plowed or maintained after snow events.

Solution:

- Build new asphalt emergency access drive along south side of complex connecting the Stirling Road parking lot with the tennis parking lot, approximately 900 LF.
- Provide new asphalt walks from emergency exits to the new emergency access drive.

Base Referendum – Hard Costs **9,500,000.**

- Steam Pipe Replacement 2,000,000.
- Roof Replacement - South 3,000,000.
- Roof Replacement - North 2,000,000.
- Window Wall Replacement - South 750,000.
- Exhaust Fan Replacement 500,000.
- Redesign South Kitchen and Servery 500,000.
- Redesign North Servery 500,000.
- Emergency Access Driveway – 78 250,000.

Contingency @ 7.5% **712,500.**

Soft Costs: **1,168,176.**

- A/E @ 7.0% 672,500.
- Project Management 333,125.
- Legal, Bond Counsel 84,473.
- Testing, Fees, Etc. 59,328.

Base Referendum – Projected Total Costs **11,380,676.**

Optional Referendum Projects for Consideration

The base scope of work for the proposed referendum include projects identified as critical to maintaining the integrity of the building envelope and restoration of failed mechanical equipment resulting in a need to improve the indoor air quality and to maximize efficiencies in energy consumption for the HVAC systems. We have identified other important projects for consideration that would increase efficiency and effectiveness in the specified areas indicated. The following items should be considered as options for this referendum:

1. **Repave Front and Rear Lots**
2. **South Cafeteria and Kitchen Addition**

1. Site Improvements Including –

Repave Front Asphalt Parking Lot:

Repave Rear Asphalt Parking Lot:

In previous Joint Committee meetings it was determined that this scope of work should not be included in this Recommended Referendum. It was determined that repairs to the parking lots could be more effectively funded in the annual budget over multiple years and/or a lease/purchase program.

The existing parking lots to the east and west of the school are in severe disrepair. These areas are frequented by student, faculty, staff, and bus traffic. There are severe potholes and areas of settlement creating tripping hazards. Areas of the adjacent concrete walks and curbs have spalled or cracked and create trip hazards throughout the campus.

These parking lots, curbs and walks need to be repaved to provide new lots and access walks. Previous repairs have topped many of the lots and effectively eliminated curbs to stop vehicles from driving onto the walkways. The pavement is at a point where a less expensive topping will only have short term effects.

Current Conditions:

- Parking lots on the east and west sides of the complex are in extreme disrepair including 82,500 SF off of Stirling Rd and another 79,500 SF behind the North Building.
- Potholes and other areas of excessive settlement have created a tripping hazard and pose a threat to pedestrians.
- Areas on the west parking lot are developed over an area of a known bog.
- Islands and elevated curbs are in poor condition and hinder efficient traffic flow and maintenance.

Solution:

- Repave parking lots on both sides of the facility including 82,500 SF off of Stirling Rd and another 79,500 SF behind the North Building.
- Reconfigure parking lot layout including use of elevated islands and curbs to maximize utilization of the parking areas and allow efficient maintenance (snow clearing).
- Curb repair as required throughout the site.
- Related repairs to failing concrete walks.

Site Improvements – Hard Costs **1,150,000.**

- **Repave Front Lot** **625,000.**
- **Repave Rear Lot** **525,000.**

Contingency @ 10% **115,000.**

Soft Costs : **148,614.**

- **A/E @ 7.5%** **86,250.**
- **Project Management** **43,575.**
- **Legal, Bond Counsel** **11,033.**
- **Testing, Fees, Etc.** **7,756.**

Site Improvements – Projected Total Costs **1,413,614.**

Financial Summary

Recommended Referendum –

11,380,676.

▪ Steam Pipe Replacement	2,000,000.
▪ Roof Replacement - South	3,000,000.
▪ Roof Replacement - North	2,000,000.
▪ Window Wall Replacement - South	750,000.
▪ Exhaust Fan Replacement	500,000.
▪ Redesign South Kitchen and Servery	500,000.
▪ Redesign North Servery	500,000.
▪ Emergency Access Drive	250,000.
▪ Soft Costs & Contingency	1,880,676.

Other Considered Project Scope

Option#1: Site Improvements –

1,413,614.

▪ Repave Front Lot	625,000.
▪ Repave Rear Lot	525,000.
▪ Soft Costs & Contingency	263,614.