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November 2, 2021

**Ms. Janet Slemenda**  
 HKT Architects Inc.  
 24 Roland Street, Suite 301  
 Charlestown, MA 02129

Re: **City of Nashua**  
**Department of Public Works**  
**141 - 143 Burke Street**  
**Nashua, New Hampshire**  
**WVA Project No. 19218**

Dear Janet:

Using the information derived from the 50% construction energy model, construction cost estimates, preventative maintenance (PM) and replacement estimate, we offer the following life cycle cost (LCC) estimates:

<b>Scenario #1</b>		
Evaluation Period	20	Year
Interest	2.5%	
Initial Building Cost	\$11,000,000	Total
Estimated Annual Operational Energy Cost	\$46,390	kWh
	\$11,588	Therm
Mechanical PM	\$25,000	Year
Replacement Cost	\$20,000	4 Years
Residual Value	\$0	
GSF of Project	25,760	Sq. Ft.
Initial Cost/GSF	\$427.02	
Operational/GSF	\$3.22	
Estimated LCC	\$793,596.42	Year

Scenario #2		
Evaluation Period	20	Year
Interest	2.75%	
Initial Building Cost	\$11,000,000	Total
Estimated Annual Operational Energy Cost	\$46,390	kWh
	\$11,588	Therm
Mechanical PM	\$25,000	Year
Replacement Cost	\$20,000	4 Years
Residual Value	\$0	
GSF of Project	25,760	Sq. Ft.
Initial Cost/GSF	\$427.02	
Operational/GSF	\$3.22	
Estimated LCC	\$810,367.04	Year

Utility rates used for the energy model are \$9.00/MMBTU natural gas and \$0.15/kWhr provided by Lisa Fauteux and Doris Brown. The PM cost value is for water treatment, filter replacement, controls adjustment, cooling tower cleaning, equipment service, and grease duct cleaning. The replacement cost value is for replacement of HVAC parts and pieces every four years. The replacement cost is not intended to represent major equipment replacement as we anticipate major equipment will last longer than 20 years with proper care and PM. Given this is a municipal building with continued use after loan repayment we did not include residual value calculation in the LCC estimates.

Sincerely,

WV Engineering Associates, PA



Richard A. Parks, III, PE