



Presentation for

JSSBC for the Nashua Middle Schools projects

Architectural Design Services for
Middle School Construction
and/or Renovations

Nashua, New Hampshire
November 07, 2019



1. Objectives and Goals
2. Concept Options
3. Cost Analysis Considerations
4. Question and Comment Updates



AGENDA

1. Address Deficiencies at Elm Street School
 - Option 1-Renovate Elm Street
 - Option 2-New Middle School
2. Review of Facility Conditions at all 3 Middle Schools
3. Evaluate a model for (3) 800+ Student Middle Schools
 - Special Education Spaces
 - Middle School Team Areas
 - Unified Arts
 - Safety and Security
 - Athletic/Phys Ed/Recreation Facilities
 - Core Space Capacity (Library, Cafeteria)
 - Site Circulation (Parent/Bus Drop-off, Parking)

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OBJECTIVES and GOALS

“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”



CONCEPT OPTIONS

“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”

OPTION #1 OVERVIEW

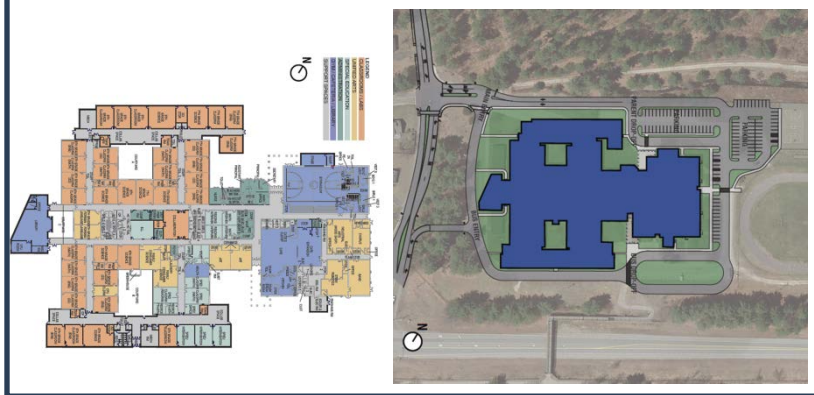
ELM STREET MIDDLE SCHOOL RENOVATIONS AND ADDITIONS



FAIRGROUNDS MIDDLE SCHOOL RENOVATIONS AND ADDITION



PENNICHUCK MIDDLE SCHOOL RENOVATIONS AND ADDITIONS



CONCEPT OPTION #1 OVERVIEW

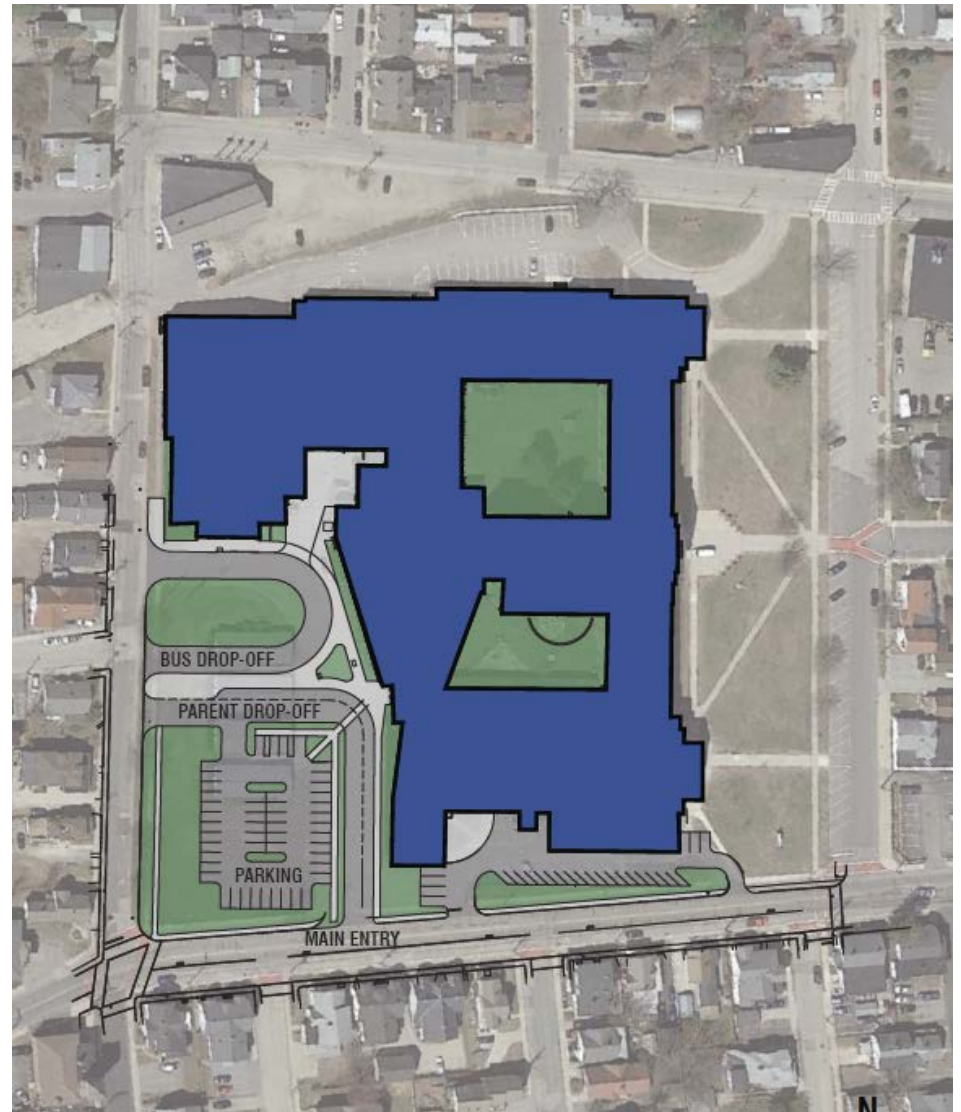
"Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept."

Benefits to consider

- History of Elm Street Middle School
- Auditorium
- Location central to city

Challenges to consider

- Built originally as a High School
- Energy efficiency substandard
- Lack of athletic fields and courts
- Pedestrian safety concerns
- Limited parking and drop off opportunities
- Difficult to expand
- Ongoing maintenance demands
- Construction Schedule impact
- Impacts current districting model
- Option #1 Project cost: \$130,243,620



OPTION #1 BENEFITS AND CHALLENGES

“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”

OPTION #2 OVERVIEW

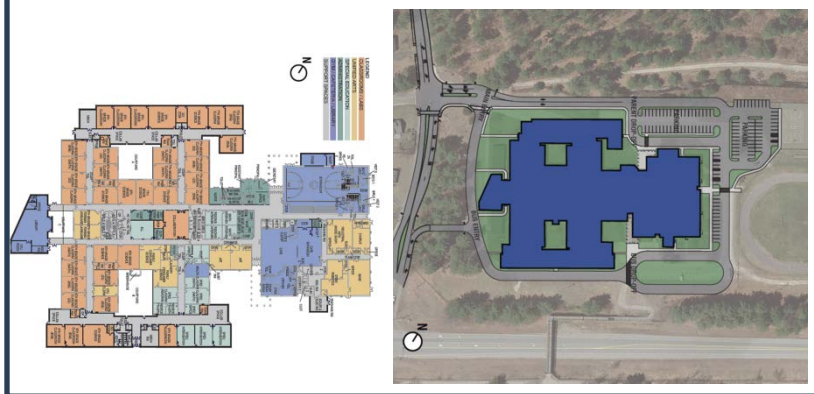
NEW MIDDLE SCHOOL



FAIRGROUNDS MIDDLE SCHOOL RENOVATIONS AND ADDITION



PENNICHUCK MIDDLE SCHOOL RENOVATIONS AND ADDITIONS



CONCEPT OPTION #2 OVERVIEW

“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”

Benefits to consider

- New Construction
- Meets/Exceeds modern efficiency standards
- Ability to integrate natural setting into curriculum
- Appropriate parking
- Athletic fields and courts
- Middle School spaces
- Ability to easily expand
- Construction schedule impact

Challenges to consider

- Setbacks from wetlands
- Negotiate access to site from Buckmeadow Road
- Impact to current districting model
- Option #2 project cost: \$114,898,992
 - Additional SPED program cost: \$4,810,956



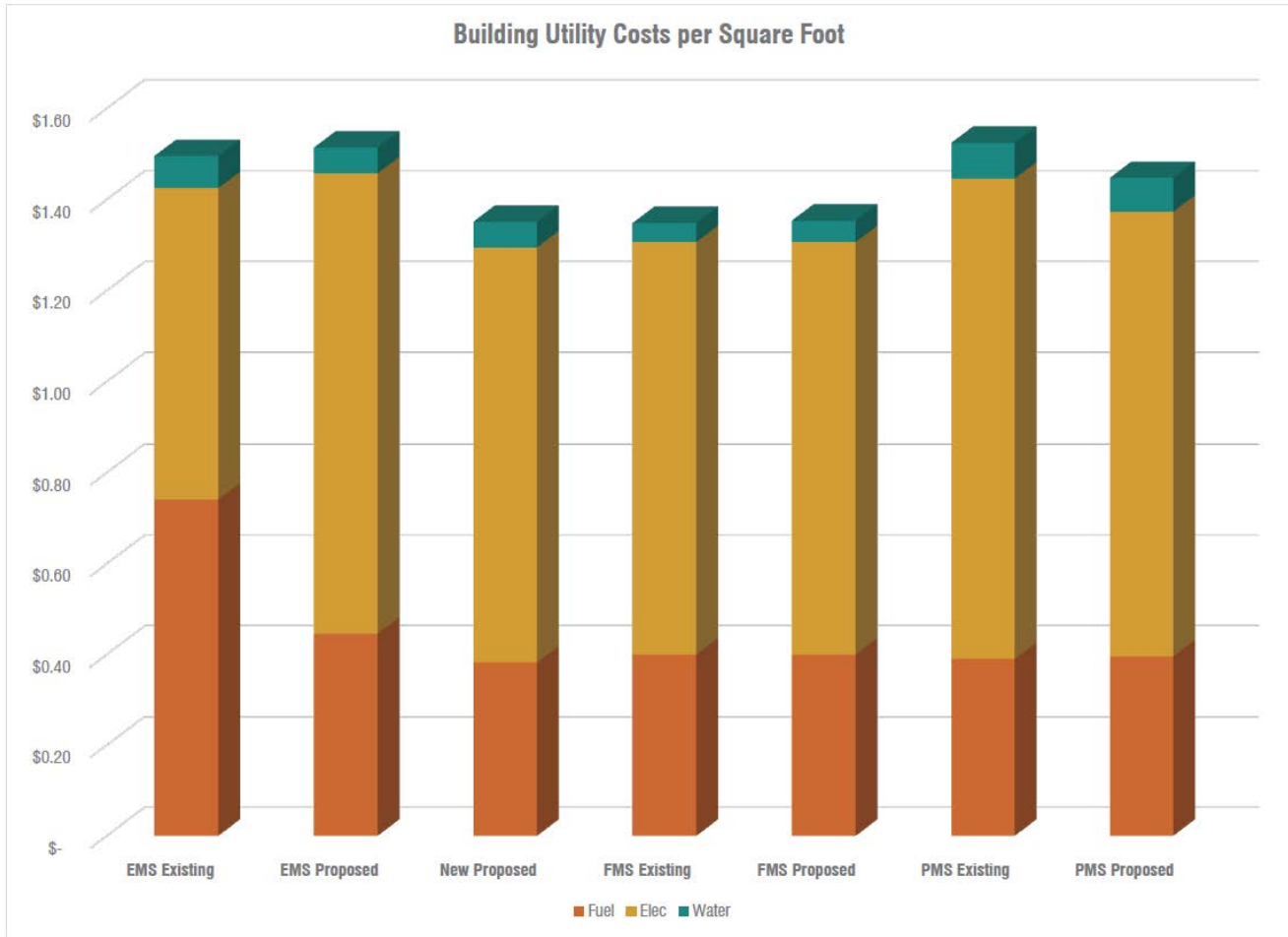
OPTION #2 BENEFITS AND CHALLENGES

“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”



Cost Analysis Considerations

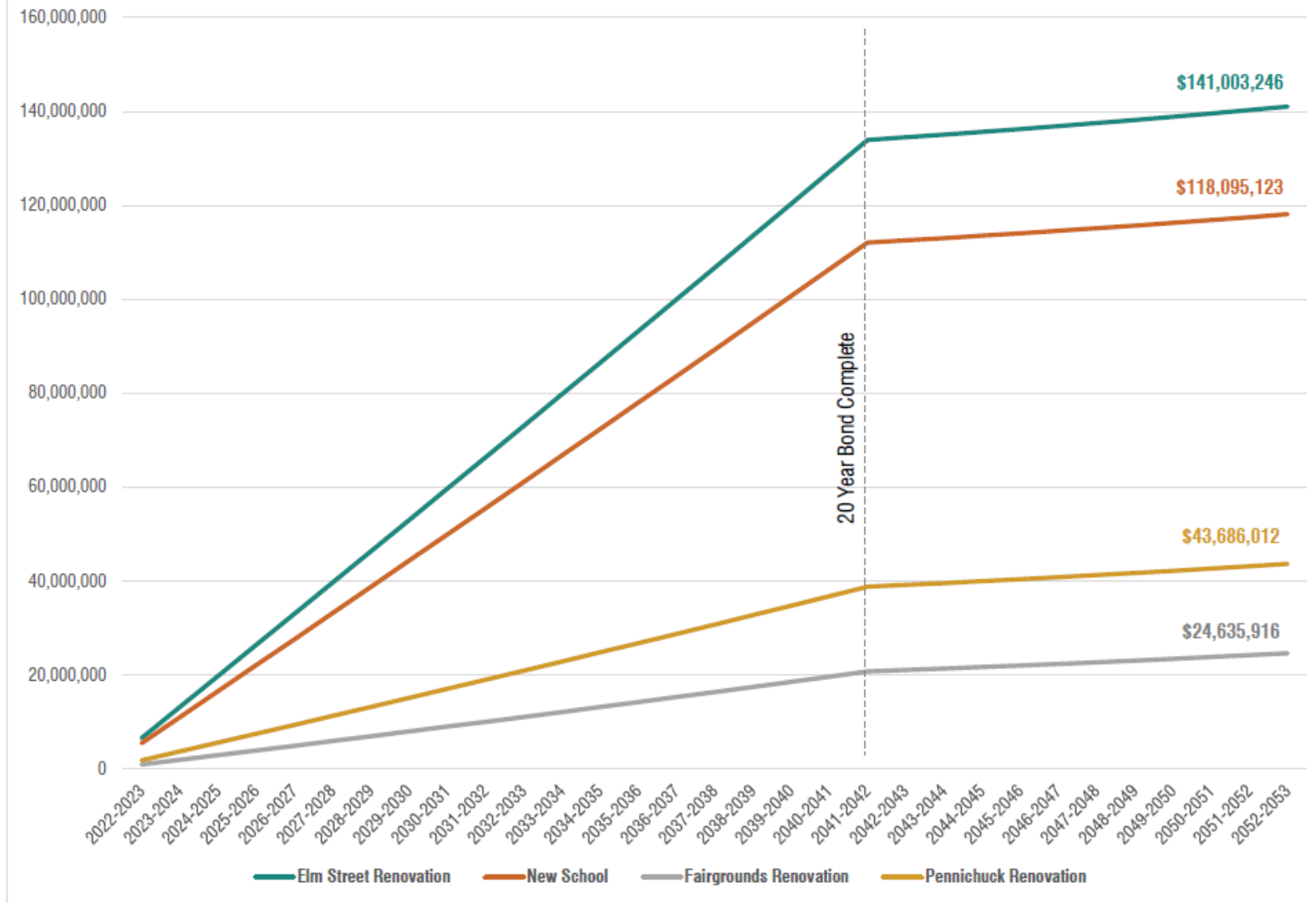
“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”



ENERGY COST ANALYSIS SUMMARY
 (ANNUAL COST / SF)

“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”

Cumulative Life Cycle Costs (30 years, Construction and Utility Costs)



LIFE CYCLE COST ANALYSIS

“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”



Question and Comment Updates

“Building a diverse learning community by encouraging students to open their eyes to explore, their minds to create, and their hearts to accept.”

Base System

- Natural Gas Boiler Heating
- Chilled Water Cooling

Option #1

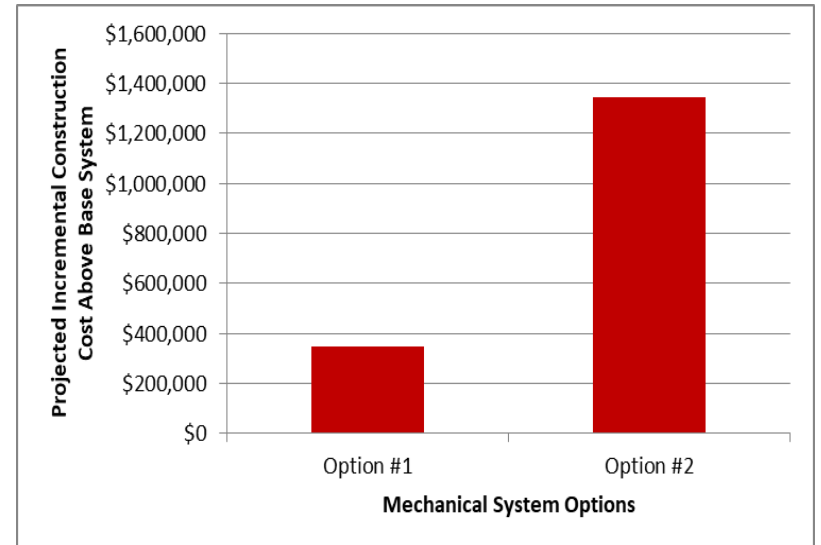
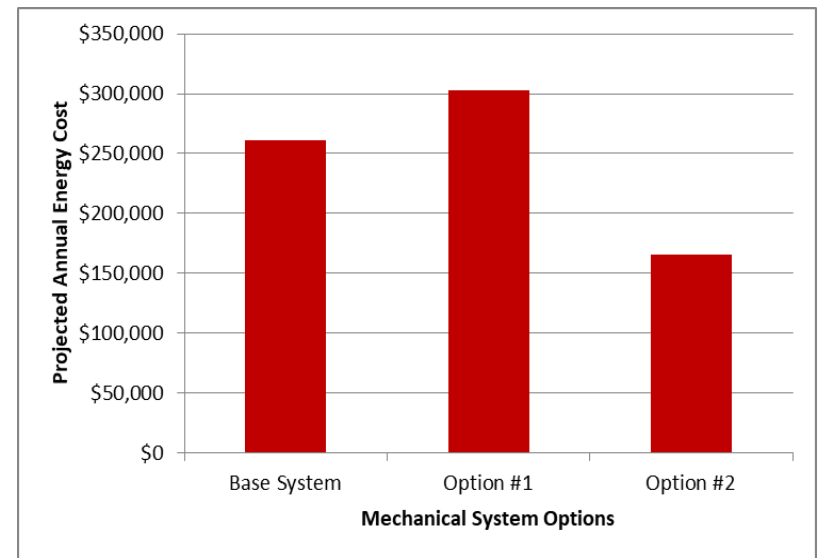
- Wood Pellet Boiler Heating
- Chilled Water Cooling

Option #2

- Geothermal Heating
- Natural Gas Boiler Backup Heating
- Geothermal Cooling

Simple Payback

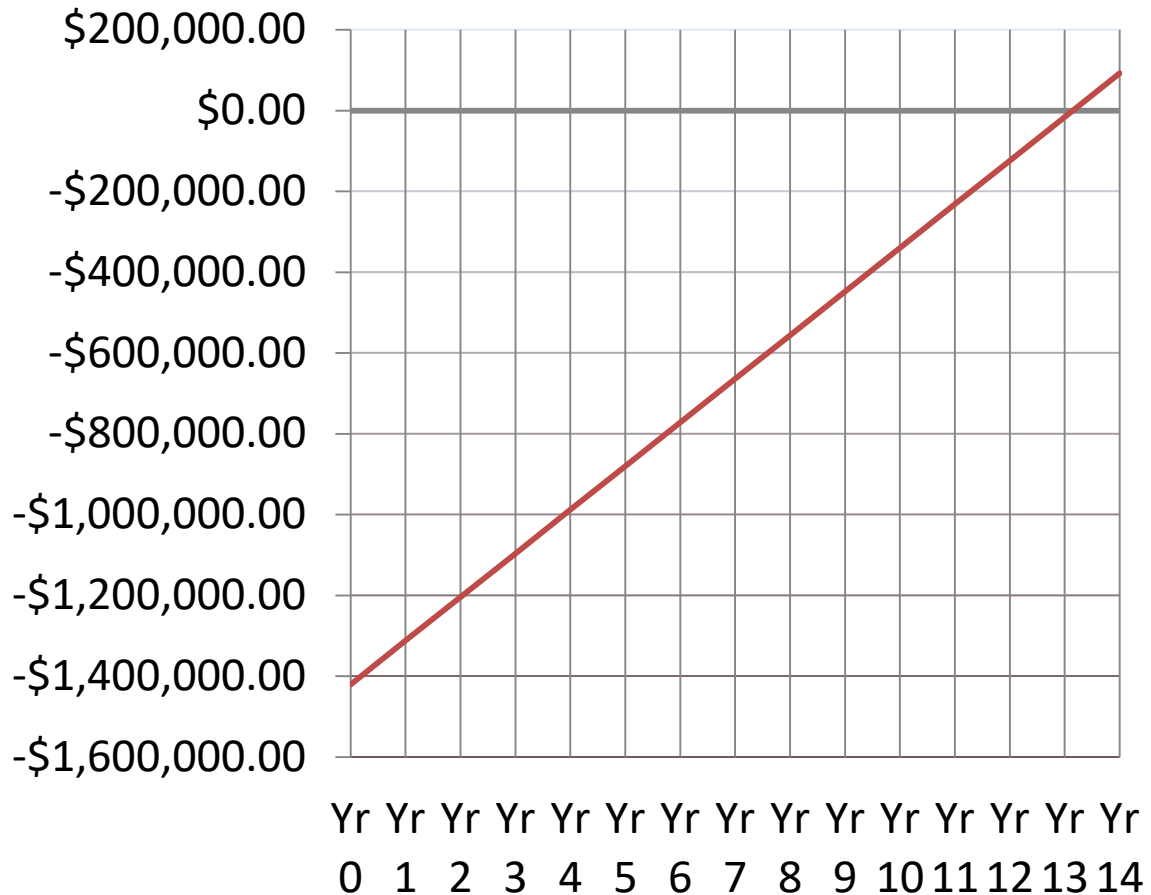
- Option #1 does not pay back since energy costs are higher than Base System
- Option #2 has 14 year payback period



MECHANICAL SYSTEM COMPARISON

- National Electric Code (NEC) permits a max of 660,000 Watts connected to an electric service.
- PV panel of 30"x68" can produce approx. 300 Watts
- 2,200 PV panels (32,000 SF)
- Estimated install cost of \$1,420,000
- Production of approx. 800,000kWH per Year
- \$108,000 per year (estimated \$0.14/kWH)
- 13+ year payback

Photo Voltaic Payback Analysis



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PHOTO VOLTAIC ANALYSIS



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PROPOSED NEW SITE (NEIGHBORHOOD VIEW)

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- Visit www.nashua.edu and click the link to the right on the home page
- FAQ list to be added

Events

er 11, 2019

ember 27, 2019
ing!

ember 27, 2019

ember 04, 2019
Processes

EVENTS →

Events

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