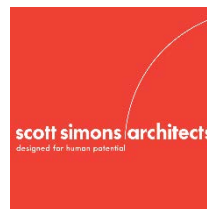




# Needs Assessment Presentation

## Cape Elizabeth Schools

### October 29, 2019



# Introductions

## CAPE ELIZABETH BUILDING COMMITTEE



James Hebert, PE  
Project Manager



Calen Colby, PE  
President, CCE LLC



Austin Smith, AIA  
RIA, LEED AP  
Lead Designer



Julia Tate, AIA  
LEED AP BD+C  
Lead Designer



# School Revolving Renovation Fund

# School Revolving Renovation Fund

- Approved applications will receive a 0% interest, 10-year term for the loan.
- Loans are awarded once the State of Maine has verified a project's completion.
- Municipalities front the cost of the project, and are reimbursed by the State of Maine once the project(s) is/are completed.
- Cape Elizabeth will receive a 30% forgiveness rate, and will only need to reimburse the state of Maine for 70% of the total loan over the 10 year term. (Cape Courier, Sept-25 - Oct-9 issue)

# School Revolving Renovation Fund

- Priority 1: Health, Safety, and Compliance Renovations
- Priority 2: Repairs and Improvements not Related to Health, Safety, and Compliance
- (12) Applications were submitted to the State of Maine for SRRF funding consideration.
  - Total amount requested: \$988,341
- With the method of using individualized project datasheets, it was much easier to identify projects that met the SRRF criteria.

# School Revolving Renovation Fund

## High School:

- **Indoor Air Quality** - cleaning of all ductwork and re-commissioning of HVAC system.
- **Emergency Plumbing Fixtures** - ADA compliant eyewash/shower fixtures, floor drains, and water service to all science classrooms, art classrooms, and janitor spaces.
- **Intercom and Public Address System** - Correction/replacement of existing system
- **Metal Shop** - Provide new ADA compliant lift, NFPA-33 Compliant Paint Spray Booth, Metal Dust Collection System, Ventilation for Welding System
- **Roof Structure Reinforcement** - Reinforce existing section of roof to accommodate snow load code requirements.

# School Revolving Renovation Fund

## Middle School:

- **Indoor Air Quality** - cleaning of all ductwork and re-commissioning of HVAC system.
- **Emergency Plumbing Fixtures** - ADA compliant eyewash/shower fixtures, floor drains, and water service to all science classrooms, art classrooms, and janitor spaces.
- **Failing Precast Window Sills** - Remove existing window units and install new windows, provide new flashing, and repair/replace brick.
- **Replacement of Skylights** - (3) locations, removal and replacement of existing skylights due to observed deterioration.

# School Revolving Renovation Fund

## Pond Cove Elementary:

- **Indoor Air Quality** - cleaning of all ductwork and re-commissioning of HVAC system.
- **Emergency Plumbing Fixtures** - ADA compliant eyewash/shower fixtures, floor drains, and water service to all science classrooms, art classrooms, and janitor spaces.
- **Replacement of Skylights** - (3) locations, removal and replacement of existing skylights due to observed deterioration.



# School Revolving Renovation Fund

## SRRF Timeline:

- September 27, 2019: SRRF Applications Submitted
- February 2020: State of Maine announces SRRF approvals
- June 2020: Municipal Vote to approve SRRF projects
- July 2020-December 2020: Preparation of Bid Documents
- December 2021-February/March 2021: Bid Process
- March/April 2021: Construction begins ([post-snow](#))
- July 2021: Construction Ends

# School Revolving Renovation Fund

- Due to schools being occupied through mid-June, it is critical that projects selected would be 100% complete by the July 2021 deadline.
  - Work would be phased and performed off-hours and on weekends to avoid disrupting students
- Should this program be available in the future, the datasheets in the Needs Assessment are ideally suited for the application.
- Thank you to Donna Wolfrom and Marcia Weeks for identifying this SRRF program early on in the Needs Assessment Project!



# Needs Assessment Report

# Needs Assessment Report

- 24 Separate field investigations were conducted between June 2019 and August 2019
- Over 220 projects identified on datasheets
- Stakeholder Interviews/Meetings:
  - June 14, 2019: Pond Cove and Middle School Staff (2)
  - June 17, 2019: High School Staff (1)
  - August 8, 2019: Public Meeting held at Town Hall (1)
  - Meetings with all three principals
- Project Team Meetings:
  - June 26, 2019
  - July 30, 2019
  - September 5, 2019

# Needs Assessment Report

- Introduction
- Pond Cove and Middle School Narrative
- High School Narrative
- Appendix A - Datasheets
- Appendix B - Site Photos
- Appendix C - Stakeholder Notes/Questionnaire
- Appendix D - Cost Data
- Appendix E - Plumbing Code Requirements
- Appendix F - Existing Diagrammatic Floorplans
- Appendix G - Neighboring District Comparisons

# Needs Assessment Report

- Scoping of Projects

- Based on information gathered from field investigations
- Each project documented on a datasheet to clarify scope of work
- Each project was categorized by critical (red), intermediate (yellow), and low priority (green)
- Cost for each project documented in Appendix D (Cost Data)
  - Some projects weren't able to be captured in an exact cost (i.e. new cafeteria and main entry additions)

# Needs Assessment Report

## Code Lookup/Legend

Example: H-320-A-4030 (Science Rooms: Improvements)

<u>School Code</u>	<u>Location</u>	<u>Discipline</u>	<u>Item Number</u>
<b>H</b>	<b>320</b>	<b>A</b>	<b>4030</b>
E – Elementary School M – Middle School EM – Elementary & Middle School <b>H – High School</b>	<b>Room Number, OR</b> ALL – All buildings, NEW – New buildout, EXT – Exterior, ROOF – Roof	<b>A – Architectural</b> BE – Building Envelope C – Civil/Landscape E – Electrical FP – Fire Protection LS – Life Safety M – Mechanical P – Plumbing S – Structural SC – Security	This Item Number is used to catalog work items sequentially by school:  1### – Elementary 2### – Middle 3### – Elementary and Middle <b>4### – High</b>

### Priority Codes

Red	Work item will need to be addressed within the next 0-3 years
Yellow	Work item will need to be addressed within the next 3-5 years
Green	Work item will need to be addressed within the next 5-10 years

### Cost Codes

\$	= \$1 through \$10,000
\$\$	= \$10,001 through \$50,000
\$\$\$	= \$50,001 through \$100,000
\$\$\$\$	= \$100,001 and higher

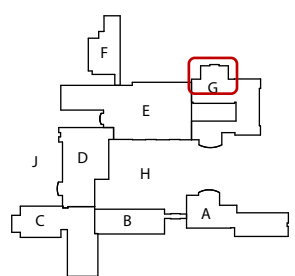
Note: All priority codes assigned have been based on detailed field investigations conducted between July 2019 and August 2019 by Colby Company, LLC and Scott Simons Architects. The information analyzed is based on current, existing conditions observed.

# Failing Precast Window Sills

## RELATED SCOPES OF WORK

Not Applicable

M-G-BE-2010					
Priority	Cost				
	\$\$\$				
Coordination by Discipline					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A	M	E	P	FP	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S	LS	SC	BE	C	



## EXISTING CONDITIONS

The 1960 addition to the Middle School utilizes a window combination that consists of (2) double-hung windows with a fixed picture window between. The combinations are set in composite brick wall construction with precast concrete sills that are composed of (4) individual pieces. The team witnessed locations where the embedded anchors in the precast sills have lost their anchorage causing the sills to come loose, dislodge, and partially move into the wall cavity. At locations where the sills have not lost their anchorage, the mortar between the sill pieces is no longer present. This condition must be immediately remedied as it presents the following concerns:

- Water entry and damage to interior finishes.
- Freeze/thaw spall of brick and/or precast concrete.
- Potential for loose precast sills to fall out of opening.

Additionally, in many instances the large picture window has lost its glazing seal, resulting in reduced thermal performance, reduced visual clarity, and potential water intrusion.

## RECOMMENDATIONS

Remove the existing window units at each location. Remove existing sill construction to level of flashing (1 brick course below). Replace flashing, damaged masonry, and membrane flashing to create water tight condition with weeps. Install new window units.



Dislodged precast window sills



Embedded anchor no longer attached to backup

## SCOPE OF WORK

At 10 locations, remove existing windows and associated masonry and flashing at sill condition. Reconstruct sill condition and install new window units. As a temporary measure, re-set and anchor loose precast window sills. Install backer rod and sealant at the ends and joints between precast sill pieces. Re-point missing / damaged mortar joints as required.



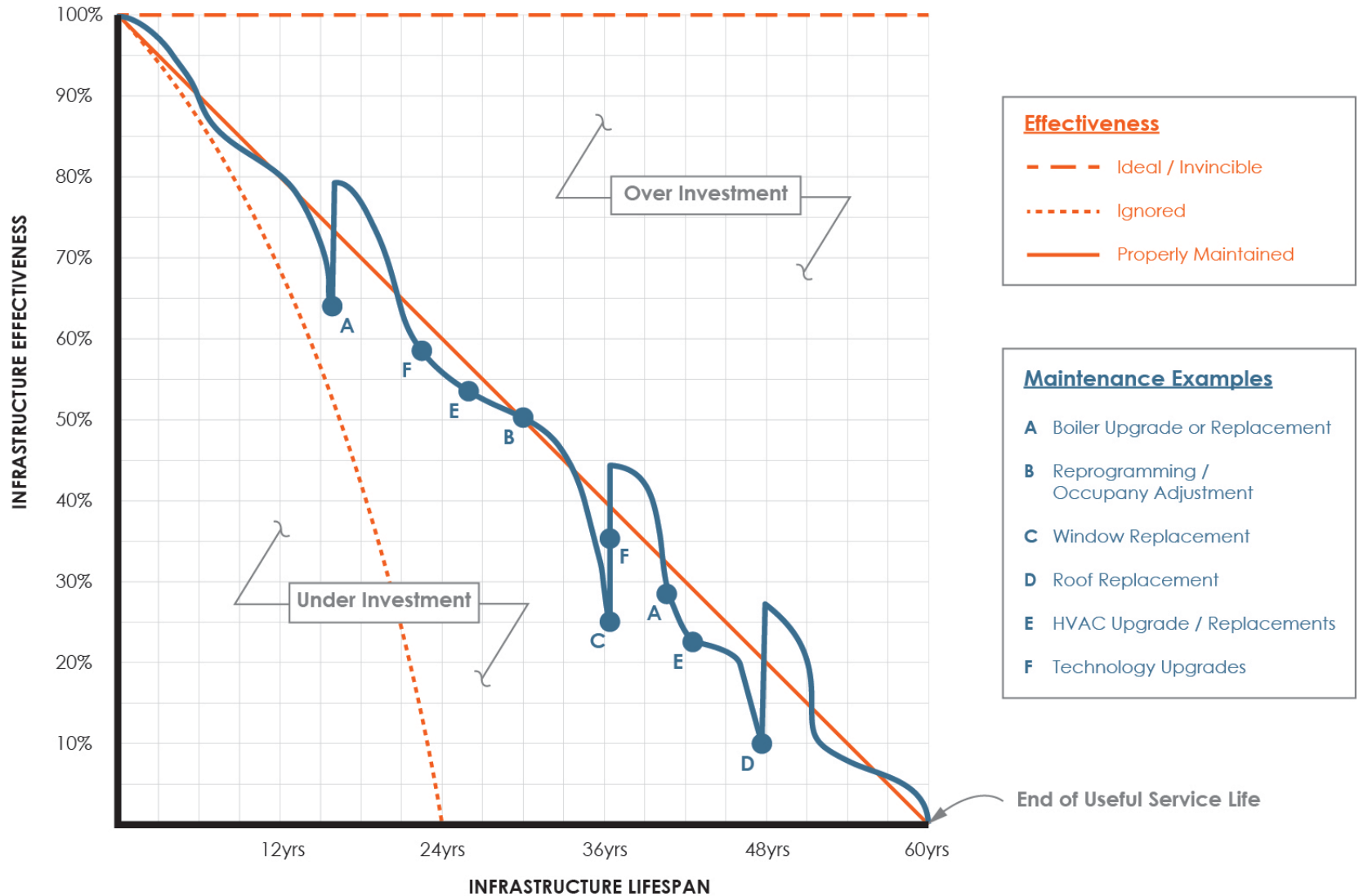
# Needs Assessment Report



## CAPE ELIZABETH SCHOOLS - COST WORKSHEET

<b>SUB TOTAL COST</b>	<b>Budget</b>	<b>Low</b>	<b>High</b>	<b>\$ -</b>
General Conditions	0.0%	5%	10%	\$ -
Construction Overhead & Profit	0.0%	5%	10%	\$ -
Estimating Conditions Contingency	0.0%	5%	10%	\$ -
<b>BASE CONSTRUCTION COST</b>				<b>\$ -</b>
		<b>ESCALATION VALUE</b>		
CONSTRUCTION YEAR (ESCALATION)	2021	0.04		\$ -
<b>TOTAL CONSTRUCTION COSTS</b>				<b>\$ -</b>
A/E DESIGN FEE	0%			\$ -
CONSTRUCTION ADMIN	0%			\$ -
<b>OTHER SOFT COSTS</b>				
Temporary Relocations				\$ -
FF&E				\$ -
Miscellaneous (Testing, Inspections, Permitting, etc.)				\$ -
OWNER'S CONTINGENCY (IF REQUIRED)	0%			\$ -
<b>GRAND TOTAL</b>				<b>\$ -</b>

# Building Maintenance



# Current State of the Schools

- Pond Cove/Middle School
  - Building expansions since initial 1934 construction:
    - (1934, 1948, 1955, 1960, 1962, 1994, 2004 additions)
- Physical condition of the PC/MS are functionally satisfactory.
  - Basic needs are met
  - Building is otherwise not outstanding
  - Significant annual maintenance costs
    - Estimated \$1.2M each year to maintain VCT tile floors at all three schools (staff to polish floors, teachers to relocate furniture, loss of building use for summertime programs)
- Overall appearance of schools reflect age.
  - Interior CMU walls convey an institutional feel
  - Building is tired

# Current State of the Schools

- High School
  - Building constructed in 1969
    - 2004 renovation included addition of main entrance and interior upgrades (new gypsum walls, ACT ceiling tiles, other smaller architectural and mechanical upgrades)
- Physical condition is satisfactory
  - Basic needs are met
  - Building is otherwise not outstanding
  - Similar maintenance costs as PC/MS
  - No gender neutral bathroom facilities (mentioned on several different instances during this process)
    - Difficult to renovate existing bathroom with most walls being CMU construction - significant costs are involved, but not impossible
  - Numerous points of entry, challenging for current security protocols to be maintained

	Install Cost (per square foot)	Annual Maintenance Service Program (per square foot)	Years Avg Life	Replacement/ Recoat Finish Costs (per square foot)	Expense Over 20 Years (per square foot)	Cost Per Year (per square foot)
Carpet Tile	\$3.00 - \$5.00	Extraction/Low Moisture Tech Annual Cost: \$0.25	8	Replacement: \$3.75	\$15.80	\$0.79
Broadloom Carpet	\$2.00 - \$3.00	Extraction/Low Moisture Tech Annual Cost: \$0.25	8	Replacement: \$3.35	\$14.40	\$0.72
Luxury Vinyl Tile	\$6.00 - \$8.00	Spray Buff Weekly: \$0.08 Strip/Recoat Annually: \$0.50	15	Replacement: \$9.20	\$109.80	\$5.49
Vinyl Composition Tile	\$1.75	Spray Buff Weekly: \$0.08 Strip/Recoat Annually: \$0.50	15	Replacement: \$2.40	\$127.40	\$6.37
Vinyl Sheet Flooring Heterogeneous	\$4.50 - \$5.50	Spray Buff Weekly: \$0.08 Strip/Recoat Annually: \$0.50	9	Replacement: \$6.30	\$110.40	\$5.52
Vinyl Sheet Flooring Homogeneous	\$5.94	Spray Buff Weekly: \$0.08 Strip/Recoat Annually: \$0.50	9	Replacement: \$7.70	\$114.60	\$5.73
Rubber	\$8.50	Spray Buff Weekly: \$0.25	20	-	\$28.60	\$1.43
Linoleum	\$5.25	Spray Buff Weekly: \$0.08 Strip/Recoat Annually: \$0.50	20	-	\$98.40	\$4.92
Ceramic Tile	\$9.00 - \$10.00	Light Scrub/Reseal Annually: \$1.50	20	Deep Scrub & Reseal Every 5 Years: \$2.00	\$48.20	\$2.41

**Estimated Costs Per Year  
For VCT Flooring  
At  
Cape Elizabeth**

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Pond Cove Elementary: 89,280 sqft.

Middle School: 81,555 sqft

High School: 162,630 sqft.

**Total: 333,465 sqft**

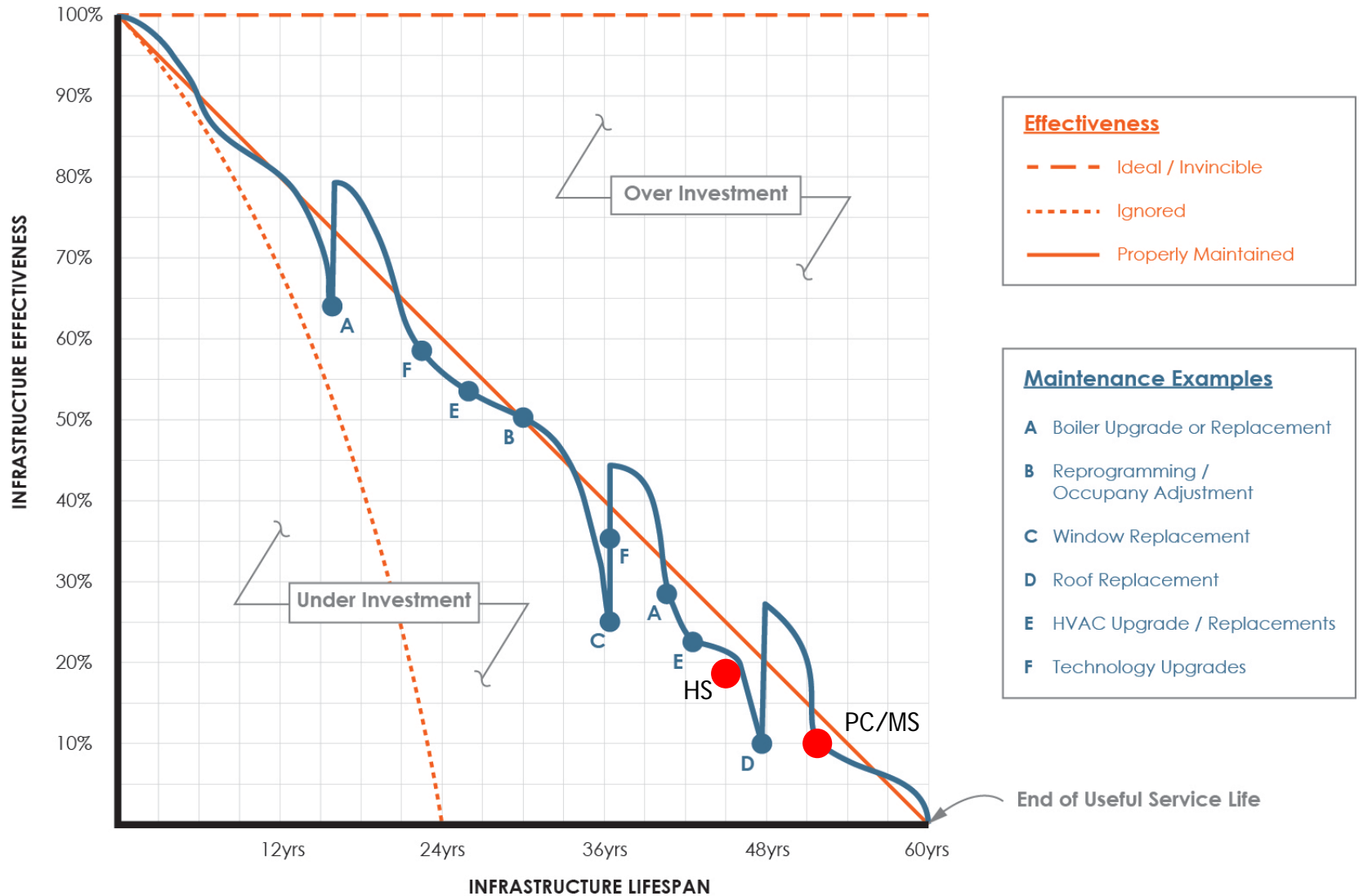
        X 60% (approximately 60% of the total space is VCT tile)

200,079 (square footage of VCT tile)

        X 6.37 (cost per year, per sqft)

**\$1,274,503.00 Total cost per year to maintain VCT tile floors at Cape Elizabeth**

# Building Maintenance



# Immediate Building Issues

- Building Envelope
  - Failing precast windows at the HS
  - Failing sills at the PC/MS
- Physical Security
  - Main entrances at both school buildings (PC/MS)
- IT/Security
  - Need HD security cameras and monitors to see visitors more clearly
- HVAC Redesign
  - Both schools have issues with air quality and distribution (too hot, too cold, no air circulation in rooms)
  - HVAC equipment air filters need to be replaced more often (becoming too saturated too quickly)
  - Mechanical units vary widely in age and varying control systems (incompatibility between systems)



# Path Forward/Next Steps

- Option 1: Do nothing.
  - Maintenance curve will begin to fall off rapidly due to the age of all the school buildings and their systems.
- Option 2: Selectively Renovate and Restore both buildings.
  - Would require relocating students for at least one year into temporary portable classrooms while renovations would take place. School renovation would have to be phased.
- Option 3: Phased renovation combined with new construction.
  - Renovate one building to bring it to its end of life (10-15 years)
  - Concurrently, create a Masterplan of the campus that will involve demolition and construction of new schools over the next 10 years.
  - Study the cost to replace one school, while renovating the other.



Thank You!



# The Design Process

