

# A GUIDE TO ENERGY PERFORMANCE CONTRACTING IN THE K-12 MARKET





# NATIONALLY RECOGNIZED PREMIER BUILDER

- Danforth has been in Upstate NY since 1884
- We have built and grown long term relationships – our core
- Quality is always first – high performance no compromise
- Energy Projects - \$100M – over 12 years - \$750M



## Book of Giants 2021

As the nation emerges from the pandemic our Giants have embraced new technology and invested in their people while continuing to deliver essential services for their clients.

## Contractor of the Year: John W. Danforth Co.

With strength, flexibility and a sense of optimism, Danforth navigates out of 2020 with purpose and a clear vision to succeed.

[John Mesenbrink](#)

JAN 12, 2021





# DANFORTH COMPANY CAPABILITIES



Energy Performance  
Contracting

Design Build  
Expertise

Lighting Survey  
&  
Implementation

HVAC Plumbing Design  
&  
Manufacturing

Air  
Filtration/Purification

Preventive  
Maintenance Service  
Department

Manufacturing  
&  
Fabrication





# CONCERNS OF FACILITY MANAGERS

- **INFRASTRUCTURE CONCERNS OF FACILITY MANAGERS**
  - Replacing aging equipment
  - Addressing high cost/long term maintenance needs
  - Budget constraints
  - Infrastructure being removed from Capital Projects
  - Helping district administration understand facility needs.







# NYS ARTICLE 9 LAW

- New York State Energy Law – Article 9 – Energy Performance Contracts :
- Purpose: “Obtain long-term energy and cost savings . . . by facilitating prompt incorporation of energy conservation improvements.”
- “Such arrangements will improve and protect the health, safety, security and welfare of the people of the state by promoting energy conservation and independence . . .”
- Became reality in 1994





# HOW AN EPC WORKS

- ESCO and School District will identify if there is a viable project through existing Utility Usage and Savings. Custom – tailored project for the customer
  - 1<sup>st</sup> : Utility Energy Benchmark Analysis
  - 2<sup>nd</sup> : Onsite Preliminary Assessment
  - 3<sup>rd</sup> : Release public RFP to review proposals
  - 4<sup>th</sup> : select an Energy Services Company (ESCO) to complete investment grade audit and develop project scope/savings/construction timeline.
  - 5<sup>th</sup> : NYSED Approval, Procurement, Construction.
- NO COST
  - Benchmark Analysis, Preliminary Assessment, RFP response, and Detailed Energy Analysis





# TYPICAL FACILITY IMPROVEMENT MEASURES



HVAC-  
Mechanical/Electrical

Lighting  
Upgrades/Controls

Building Automation  
Systems

Building Envelope  
Improvements

Select Window  
Replacements

Renewable Energy-  
Large Scale Solar  
*ground mount  
recommended*

Renewable Energy-  
Small Student  
Engagement Kiosk





# BENEFITS: ENERGY PERFORMANCE CONTRACT

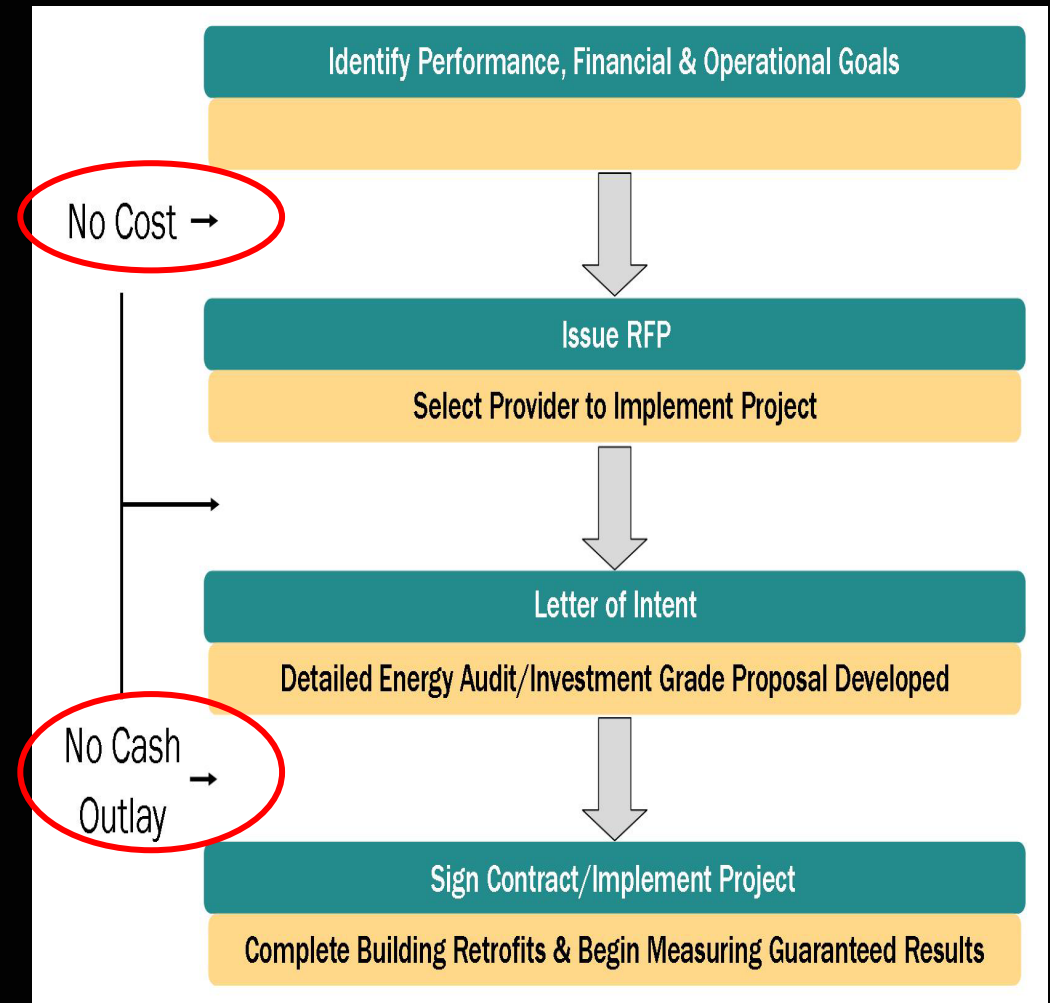
- Learning Environment Improvements
- Guaranteed Energy Efficiency District Wide
- Student Engagement Opportunities
- No Tax Levy Impact
- Positive Cash Flow to the district
- Maximize Building Aid





# METHOD OF PROCEDURE

- Issue RFP using School District's normal procurement process
- Interview/Select an ESCO
- Detailed Energy Analysis (DEA)
- Finalize project scope / Coordinate with Capital Project
- Contract
- Design → NYSED Submission
- NYSED Review & Approval Procurement
- Begin construction





# COMBINING CAPITAL AND ENERGY PROJECTS

- Projects compliment each other
- Energy Project can include energy related facility improvements
- EPC can help to reduce tax levy impact caused by Capital project.
- Energy Project can help fund future Capital Projects:
  - Positive cash flow
  - Additional Building Aid
  - Pull out energy related work to support capital project deficit.



# VOORHEESVILLE CSD

## TARGET PROJECT

### Voorheesville Central School District Option 4

Elementary School New Fixtures & Desert Aire Pool Replacement

FIM #	Facility	Facility Improvement Measure	Implementation Price	Energy Savings	Associated Savings	Estimated Utility Incentives	Simple Payback
1	JR/SR High School	Interior LED Lighting	\$285,443	\$17,033	\$3,600	\$14,737	13.3
2	Elementary School	New Interior Lighting Fixtures	\$351,404	\$7,040	\$6,750	\$6,556	25.1
3	Elementary School	New Interior Lighting Dimming Controls	\$52,356	\$742	\$2,080	\$1,454	18.2
4	JR/SR High School	Building Envelope	\$100,151	\$6,571	\$0	\$5,082	14.7
5	Elementary School	Building Envelope	\$16,318	\$1,018	\$0	\$722	15.5
6	JR/SR High School	BERT Plug Load Controls	\$16,841	\$1,677	\$0	\$2,719	8.8
7	Elementary School	BERT Plug Load Controls	\$7,485	\$745	\$0	\$1,217	8.8
8	JR/SR High School	Walk-in Refrigeration Controls	\$17,964	\$1,199	\$0	\$1,459	14.1
9	JR/SR High School	Pool Area Heat Recovery Unit	\$621,263	\$16,247	\$8,500	\$20,000	24.5
10	JR/SR High School	Auditorium AHU 1 VFD	\$27,695	\$1,993	\$0	\$1,939	13.2
11	JR/SR High School	Heating Loop Improvements	\$3,889	\$662	\$0	\$470	5.3
12	Elementary School	Heating Loop Improvements	\$1,796	\$578	\$0	\$379	2.6
13	JR/SR High School	Replace Obsolete Temperature Controls	\$53,893	\$4,301	\$0	\$3,956	11.8
14	Elementary School	Replace Obsolete Temperature Controls	\$20,210	\$1,718	\$0	\$1,537	11.1
15	JR/SR High School	PC Power Controls	\$13,431	\$2,351	\$0	\$3,813	4.5
16	Elementary School	PC Power Controls	\$6,011	\$1,044	\$0	\$1,706	4.5
TOTAL			\$1,596,149	\$64,919	\$20,930	\$67,744	18.0

# ENVIRONMENTAL IMPACT

## Annual Emissions - Existing

### CO<sub>2</sub> Output (lbs)

Electricity	1,666,263
Natural Gas	1,444,071
#2 Fuel Oil	-
Propane	-
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Total	3,110,334

## Your Green House Gas Emissions are Equivalent to:



14

Acres of Forest  
Preserved from  
Deforestation



8

Railcars of Coal  
Burned



277

Cars Removed  
from the Road a  
Year



3,281

Barrels of Oil  
Burned

## Annual Emissions - Reduction Over 15 yr Project Term

### CO<sub>2</sub> Output (lbs)

Electricity	9,235,288
Natural Gas	5,404,790
#2 Fuel Oil	-
Propane	-
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Total	14,640,078

## Your Overall Emissions Reductions are Equivalent to:



66

Acres of Forest  
Preserved from  
Deforestation



36

Railcars of Coal  
Burned



1,302

Cars Removed  
from the Road a  
Year



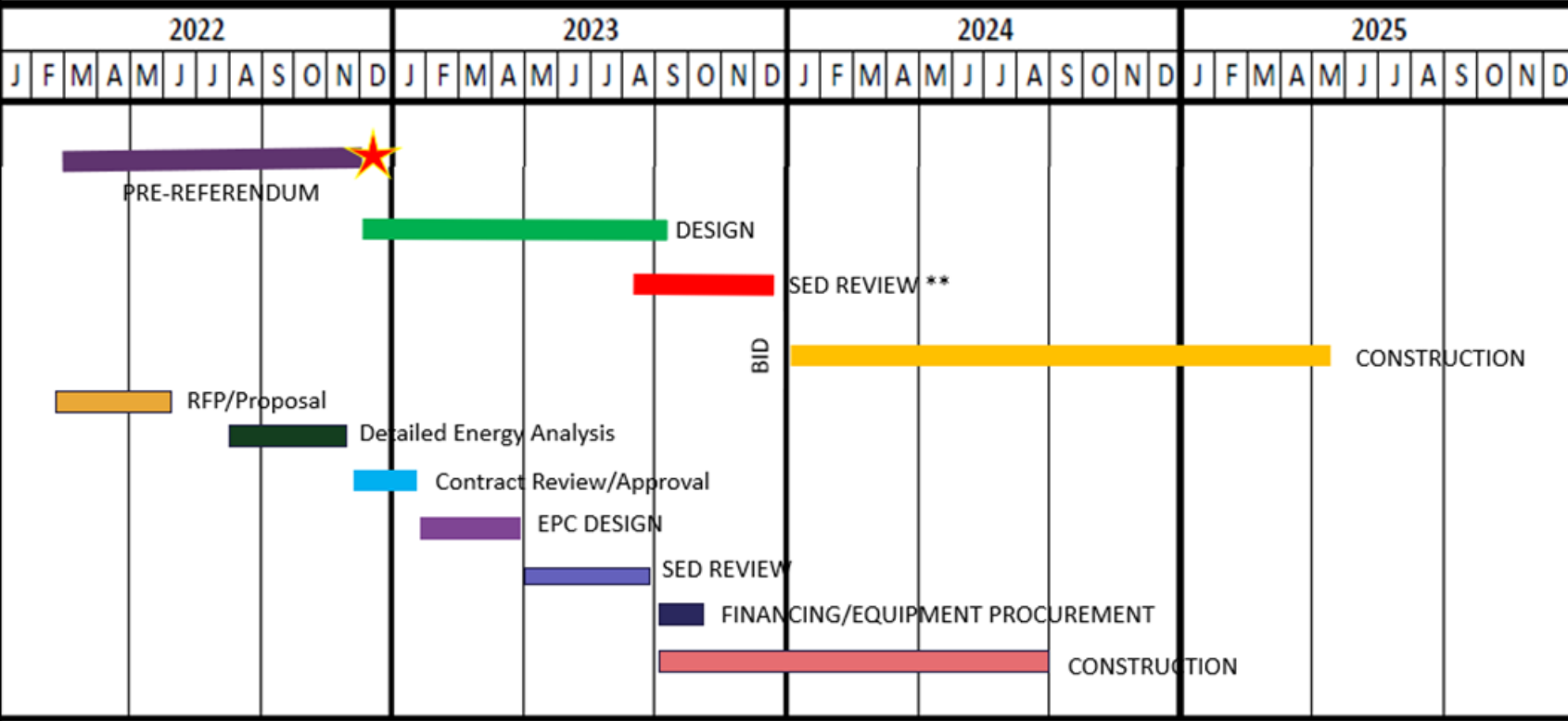
15,443

Barrels of Oil  
Burned





# VOORHEESVILLE CSD PROJECT TIMELINE





# QUESTIONS/ COMMENTS

# THANK YOU!

