

# **Board Finance and Operations Committee Meeting**

November 1, 2023

# Performance Management

November 1, 2023

Traverse City Area Schools  
November 1, 2023

# Guaranteed Energy Savings Program

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## The Key to Reallocation of Utility Dollars

*Gwen Pettit, Trane K12 Comprehensive Solutions  
Phil Mikulski, Trane Educational Consultant*



# Energy Savings Performance Contracts

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Financing Capital Projects with Energy Savings & Existing Operating Expenses





# Michigan Bond Options

## Voted Bond Issue

- **Description:** the community approves a not to exceed bond amount with all allowable uses of bond proceeds at an election. Normal election dates include May, August, and November time frames.
- **Advantages:** with the approval, the school district is allowed to levy an annual dedicated bond millage rate to fund bond payments. **Annual bond payments are therefore not funded by the general fund.**
- **Disadvantages:** the planning process from start to the election date can run about **1.5 years**. Successful election must occur to secure funding.



## Non-Voted Bond Issue

- **Description:** the Board of Education adopts a bond authorizing resolution. The school district completes the bond sale process.
- **Advantages:** shorter financing process. Can run from 2 to 12 months from start to finish. **No election required. Voted by the school board.** Can be implemented with a Voted-Bond subject to SEV.
- **Disadvantages:** bond issue size is subject to 5 % of State Equalized Value (SEV) debt limit. Annual bond payments must be funded from the general fund, sinking fund collection, **energy savings**, or other identified source. A dedicated bond millage is not allowed since an election did not occur.

## Non-Voted Energy Conservation Improvement Bond Issue

- **Description:** the Board of Education adopts a bond authorizing resolution authorizing allowable energy savings improvements to be financed. The school district completes the bond sale process.
- **Advantages:** this type of bond issue is **not** subject to the 5% of SEV debt limit at the time of the sale. Shorter financing process. Can run from 2 to 12 months from start to finish. **No election required. Voted by the school Board.** Can be implemented with a Voted-Bond.
- **Disadvantages:** Annual bond payments must be funded from the general fund, sinking fund collections, **energy savings**, or other identified sources. A dedicated bond millage is not allowed since an election did not occur.

# What is Energy Savings Performance Contracting (ESPC)?

“ESPC is a financial mechanism used to pay for today’s facility upgrades with tomorrow’s energy savings – without tapping your organization’s capital budget.”

~U.S. Department of Energy

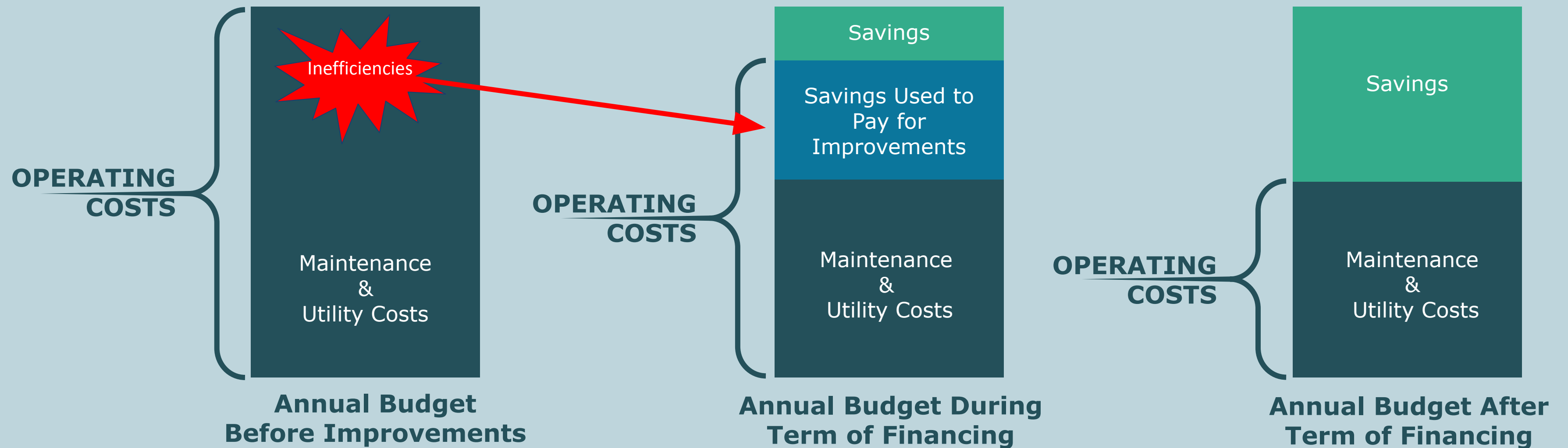


MI Legislature: M.C.L.A 380.1274a SCHOOL PERFORMANCE CONTRACTING



# How Does It Work?

**“It’s a Simple Reallocation of Your Current Utility Dollars!”**



# Non-Voted Energy Conservation Improvement

Guaranteed

## Bond Issue Structure

Positive cash flow  
year-after-year

Year	Estimated Annual Energy Savings	Bond Payments			Difference
		Principal	Interest	Total	
1	\$125,000		\$97,000	\$97,000	\$28,000
2	\$250,000	\$135,000	\$97,000	\$232,000	\$18,000
3	\$250,000	\$140,000	\$91,600	\$231,600	\$18,400
4	\$250,000	\$145,000	\$86,000	\$231,000	\$19,000
5	\$250,000	\$150,000	\$80,200	\$230,200	\$19,800
6	\$250,000	\$155,000	\$74,200	\$229,200	\$20,800
7	\$250,000	\$160,000	\$68,000	\$228,000	\$22,000
8	\$250,000	\$165,000	\$61,600	\$226,600	\$23,400
9	\$250,000	\$175,000	\$55,000	\$230,000	\$20,000
10	\$250,000	\$180,000	\$48,000	\$228,000	\$22,000
11	\$250,000	\$190,000	\$40,800	\$230,800	\$19,200
12	\$250,000	\$195,000	\$33,200	\$228,200	\$21,800
13	\$250,000	\$205,000	\$25,400	\$230,400	\$19,600
14	\$250,000	\$210,000	\$17,200	\$227,200	\$22,800
15	\$250,000	\$220,000	\$8,800	\$228,800	\$21,200
Totals	\$3,625,000	\$2,425,000	\$884,000	\$3,309,000	\$316,000

Potential interest only in first year to match construction time period and not experiencing a full year of energy savings.

Principal payments in amortization schedule structures to match estimated annual energy savings.



# Benefits of Energy Savings Projects

Collaborative  
Process

Shortened Timeline

Minimal Risk/  
Guaranteed Energy  
Savings

Single-Source  
Accountability &  
Warranty

Addresses Utility  
Waste Spending for  
the Long-Term

Modernization of  
Equipment

Addresses Deferred  
Maintenance

Avoid Labor &  
Material Cost  
Escalation

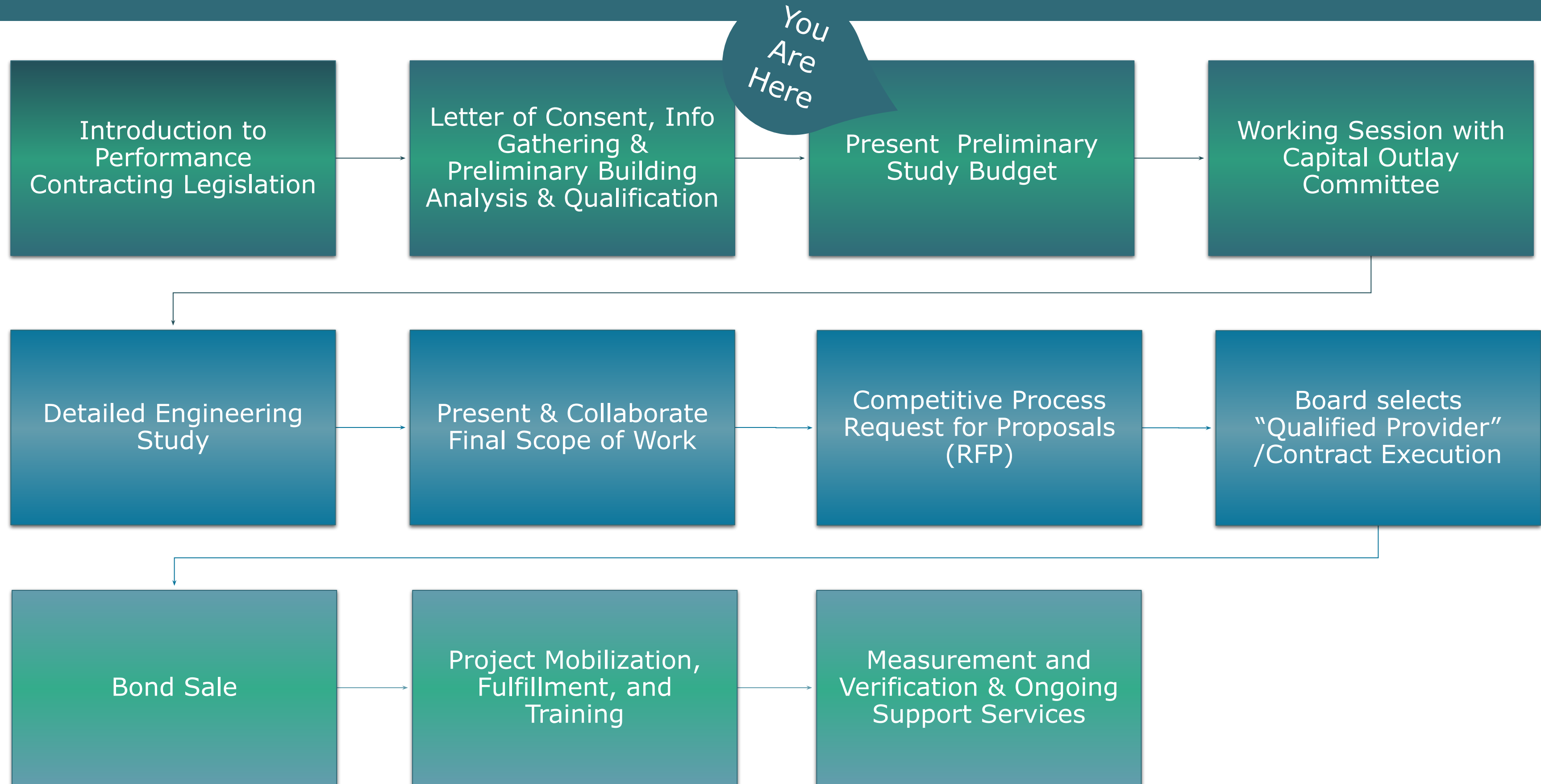
Economies of  
Scale/Bundled  
Solutions

Enhanced Learning  
Environment  
w/Improved  
IAQ/IEQ

STEM & Skilled  
Trade Program

Partner for Life

# Michigan Process - Timeline



# Michigan Case Studies

School District	Project Size	Yearly Guaranteed Energy Savings	Scope Of Work
 Alpena Public Schools	\$7,100,000	\$250,809	LED Lighting, Energy Management, Building Envelope, Water Conservation, Controls Upgrade, <b>Boiler Plants (8)</b> , HVAC Upgrades, Bus Starters, VFDs
 Dearborn Public Schools	\$11,555,556	\$499,016	<b>LED Lighting</b> , Building Envelope, Water Conservation, Energy Management System, Controls Upgrade, Steam Traps, Various HVAC Upgrades
 Ypsilanti Community Schools	\$2,000,000	\$78,913	Building Envelope, Water Conservation, Energy Management System, <b>Controls Upgrade</b> , HVAC Upgrades, VFDs
 Sturgis Public Schools	\$1,083,072	\$101,586	LED Lighting, <b>Chiller Replacement</b> , Energy Management System, Utility Rate Structure, Building Envelope, Water Conservation, Controls Commissioning & Upgrades, HVAC Upgrades
 Holt Public Schools	\$2,982,822	\$205,559	LED Lighting & Controls, <b>Energy Management System</b> , Water Conservation, BAS Controls, Various HVAC Upgrades, Dynamic Air Cleaners

# Questions?





# Who can perform an ESPC?

“The Accredited ESCO **GUARANTEES** the projected energy savings and provides ongoing reports verifying the actual savings.”

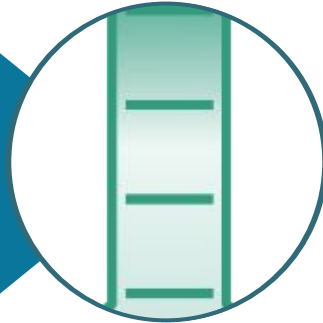
~U.S. Department of Energy

[www.naesco.org](http://www.naesco.org)

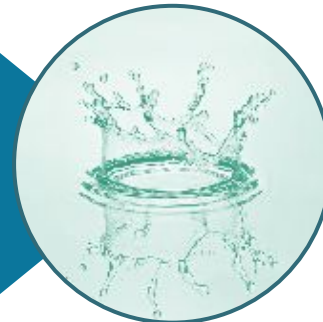


# Energy Conservation Measures

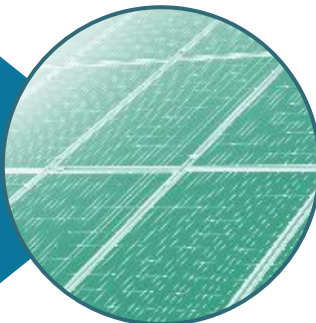
Heating & Air Conditioning  
Modernization



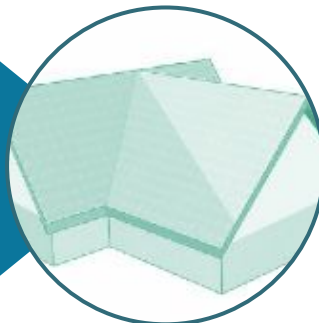
Water Conservation –  
Low Flow Devices



**\*Renewable Energy** – Solar, Wind,  
Geothermal, Thermal Storage, Battery  
Storage, Cogen, Charging Stations



Building Envelope - Roofs, Windows,  
Insulation, etc.



Ongoing Staff Development  
Training Programs



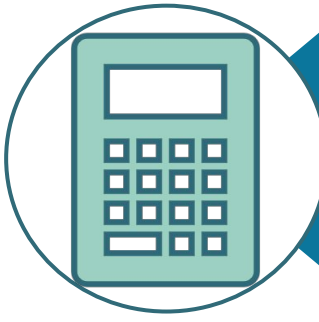
Energy Management Systems



Fuel Conversions /  
Rate Optimization



LED Lighting Technology /  
Electrical Upgrades



Intelligent Services Technology



Customized Service and  
Maintenance Programs

# Project Options

- *LED Lighting*
- *Lighting Controls*
- *Building Envelope*
- *Water Conservation*
- *Kitchen Water Conservation*
- *Energy Management System*
- *HVAC Controls Integration*
- *HVAC Controls Upgrades*
- *Steam Traps*
- *Boilers*
- *Snow Melt System*
- *Roofs*
- *Roof Top Units*
- *Air Conditioning*
- *Cooling Tower*
- *Air Handling Units*
- *Unit Vents*
- *Cabinet Unit Heaters*
- *Mini Splits*
- *Fan Coil Units*
- *Energy Recovery Unit*
- *Domestic Hot Water Heaters*
- *Pumps*
- *Ceiling Tiles*
- *Drinking Fountains w/Bottle Fillers*
- *Dampers*



# Educational Integration & Workforce Development



**BTU CREW<sup>TM</sup>**  
Bringing STEM Learning to Life

- STEM education
- Flexible lesson plans
- Easy to integrate



**VIRTUAL LEARNING LIVING LAB (VL3)**  
Your District as a Virtual Living Learning Lab

- Involve students in sustainability efforts
- Educational return on your investment
- Create advanced learning environment without a heavy lift



**NATIONAL COALITION FOR CERTIFICATION (NC3)**  
Pathway to High-Demand Careers

- Highly specialized training
- Industry-recognized certifications
- Bridge between K-12 and high-demand careers





# Generation and Storage of Energy



## Munson Hospital System

- **Cogeneration (combined heat and power)**
- Determining eligibility for the tax credit, which could be 40 to 50%
- For \$6.7M project, a **40% 179D tax credit** would be approximately \$2.7M.



## Flushing Community Schools

- **Solar**
- As part of an ESPC, Flushing Community Schools installed solar at all of their district buildings



## East Lansing Public Schools

- **Geothermal**
- Many school districts in Michigan using geothermal



## Delta College

- **45 CALMAC Ice Bank thermal energy storage tanks**
- Providing 200 kW of energy storage, allowing college to run the chiller plant while it's melting ice

# Capital Projects Update

November 1, 2023



**2023 NOVEMBER CONSTRUCTION UPDATE**



**CENTRAL HIGH SCHOOL TENNIS COURTS**

BFOC 11.1.2023



**2023 NOVEMBER CONSTRUCTION UPDATE**

LCAPS • CAPITAL PROJECTS | PLANNING



**CENTRAL HIGH SCHOOL TENNIS COURTS**

BFOC 11.1.2023





**WEST SENIOR HIGH SOCCER DUGOUTS**





**CENTRAL HIGH SCHOOL POLE VAULT / LONG JUMP**





**WEST SENIOR HIGH POLE VAULT / LONG JUMP**





**WEST SENIOR HIGH WEIGHT ROOM**



**2023 NOVEMBER CONSTRUCTION UPDATE**

**T C A P S - CAPITAL PROJECTS | PLANNING**



**WEST SENIOR HIGH WEIGHT ROOM**

BFOC 11.1.2023

















































## INNOVATION & MANUFACTURING CENTERS





## INNOVATION & MANUFACTURING CENTERS



# Finance

November 1, 2023



## 2022/2023 Audit

Fund Balance	
Beginning of year	\$13,319,363
<b>Fund Balance Increase</b>	<b>\$ 736,171</b>
End of year	\$14,055,534
Percentage of total expenditures	11.41%



# 2023/2024 Budget

Original Budget Count	8,801
Student Count (unaudited)	8,867
Difference	66
Foundation	\$9,608
Difference	\$634,128
*2023/2024 Budget Amendment - February, 2024*	



# Administrative Moving Timeline

November 1, 2023



# Administration DRAFT Moving Timeline

## Print Shop to Sabin

## Admin staff to Glenn Loomis

November 2023 - January 2024	February 2024 - March 2024	April 2024 - May 2024	June 2024
<p>December, 2023</p> <ul style="list-style-type: none"> <li>● Sabin renovations - bids advertised</li> <li>● Facilities staff prepare Glenn Loomis for Admin staff</li> </ul> <p>January, 2024</p> <ul style="list-style-type: none"> <li>● Bids due for Sabin renovations</li> <li>● Post bid interviews</li> </ul>	<p>February, 2024</p> <ul style="list-style-type: none"> <li>● Feb 9 - BFOC Sabin renovation bids</li> <li>● Feb 12 - BOE Sabin renovation bids</li> <li>● Feb 13 - Sabin renovation contract award</li> </ul>	<p>Spring Break, 2024</p> <ul style="list-style-type: none"> <li>● Staff can begin to move to Glenn Loomis</li> </ul> <p>May 1, 2024</p> <ul style="list-style-type: none"> <li>● Staff begin to move to Glenn Loomis</li> </ul> <p>May 31, 2024</p> <ul style="list-style-type: none"> <li>● Print Shop renovations completed</li> </ul>	<p>June 17, 2024</p> <ul style="list-style-type: none"> <li>● Boardman staff fully moved into Glenn Loomis</li> <li>● Print Shop closed week of June 10-14, 2024 for equipment move to Sabin</li> </ul> <p>June 28, 2024</p> <ul style="list-style-type: none"> <li>● Close on Tompkins Building, proceeds from the sale booked in the 2023/2024 fiscal year</li> </ul> <p>BFOC 11.1.23</p>



# Administration Relocation Budget

(As presented at 7.10.23 BOE meeting)

## TCAPS - Administration Building Relocation Conceptual Budget

**DRAFT**

Description	Quantity	Unit	Unit Cost	Total Estimate
<b>Administration Building</b>				
Printer Equipment Relocation	1	ALLW	\$ 10,000	\$ 10,000
Administration Building Total Budget				<b>\$ 10,000</b>
<b>Glenn Loomis</b>				
Office Areas: New Office Partition Walls	680	SF	\$ 13	\$ 8,840
Tech Allowance (Entire Building)	46537	SF	\$ 2	\$ 93,074
Modify Electrical (Rooms 5 & 6)	1	ALLW	\$ 5,000	\$ 5,000
Modify Mechanical (Rooms 5 & 6)	1	ALLW	\$ 8,000	\$ 8,000
Furniture Relocation Allowance	1	ALLW	\$ 10,000	\$ 10,000
Glenn Loomis Total Budget				<b>\$ 124,914</b>
<b>Sabin Data Center</b>				
Exterior: New SOG for Delivery Area	625	SF	\$ 35	\$ 21,875
Exterior: New Steel Canopy for Delivery Area	625	SF	\$ 40	\$ 25,000
Exterior: Upgrade/Rework of Drain System by Delivery Area	1	ALLW	\$ 15,000	\$ 15,000
Exterior: New Asphalt Drive to Delivery Area	700	SY	\$ 45	\$ 31,500
Print Shop Space: Demo Existing Ceiling Outside of Gym	2550	SF	\$ 3	\$ 7,650
Demo Existing CMU Wall (Green Shaded Areas)	3304	SF	\$ 10	\$ 33,040
Demo Existing Kitchen Counters	25	LF	\$ 25	\$ 625
Demo Existing Kitchen South Door	1	EA	\$ 500	\$ 500
Demo Existing North Bathrooms Sinks & Toilets	176	SF	\$ 50	\$ 8,800
Print Shop Space: Demo Floor	5925	SF	\$ 2	\$ 11,850
Print Shop Space: New Floor (Carpet)	5925	SF	\$ 5	\$ 29,625
Print Shop Space: Demo Suspended Ceiling in Gym	3375	SF	\$ 2	\$ 6,750
Print Shop Space: New Wall Paint	13200	SF	\$ 3	\$ 39,600
Print Shop Space: Demo Electrical	5925	SF	\$ 10	\$ 59,250
Print Shop Space: New Electrical	5925	SF	\$ 20	\$ 118,500
Print Shop Space: Mechanical Upgrades	5925	SF	\$ 25	\$ 148,125
Tech Allowance (Print Shop Area)	5925	SF	\$ 2	\$ 11,850
Print Shop Space: New Suspended Acoustic Ceiling in Green/Orange Areas Outside Gym	2550	SF	\$ 10	\$ 25,500
Exterior: Sitework for Asphalt	6300	SF	\$ 10	\$ 63,000
Demo Ceiling Outside of Gym Area	2550	SF	\$ 2	\$ 5,100
Upgrade Electrical in Remaining Building (Lights, Recepts, Cover Plates, Switches)	19016	SF	\$ 15	\$ 285,240
Sabin Data Center Total Budget				<b>\$ 948,380</b>
<b>SubTotal Budget</b>				<b>\$ 1,083,294</b>
Project Contingency			10%	\$ 108,329
<b>Total Construction Budget</b>				<b>\$ 1,191,623</b>



# Administration Assessment

(As presented at 7.10.23 BOE meeting)

August 2, 2023

Traverse City Area Public Schools  
2024 Bond Improvements

The list below describes the general intent of the project scopes at each facility and/or site. The final detail of work may vary as the actual design is developed.

Boardman Admin.

Architectural/Interiors

Kitchen: Not ADA / Update cabinets & appliances	\$ 78,962	\$ 82,120	\$ 94,754	\$ 110,546
Corridor floors: Multiple types:	\$ 57,181	\$ 59,468	\$ 68,617	\$ 80,054
Corridor ceilings: Replace first floor lay in ceiling	\$ 10,767	\$ 11,198	\$ 12,921	\$ 15,074
Corridor ceilings: Replace second floor repaint	\$ 14,357	\$ 14,931	\$ 17,228	\$ 20,099
Doors: Replace all interior doors & hardware	\$ 459,413	\$ 477,789	\$ 551,295	\$ 643,178
Replace elevator	\$ 287,133	\$ 298,618	\$ 344,560	\$ 401,986
Add air condition to entire building (instead of inefficient window units)	\$ 811,919	\$ 844,395	\$ 974,302	\$ 1,136,686
Clean and repoint all exterior stone sills	\$ 5,396	\$ 5,612	\$ 6,475	\$ 7,554
Brick: Repoint and seal	\$ 358,916	\$ 373,273	\$ 430,700	\$ 502,483
Replace exterior doors / frames	\$ 22,612	\$ 23,516	\$ 27,134	\$ 31,656
Windows: Replace with thermally broken units	\$ 155,052	\$ 161,254	\$ 186,062	\$ 217,073
Offices: Replace carpet	\$ 86,140	\$ 89,585	\$ 103,368	\$ 120,596
Offices: Replace lay in ceilings	\$ 129,210	\$ 134,378	\$ 155,052	\$ 180,894
Repaint all interior spaces	\$ 646,049	\$ 671,891	\$ 775,259	\$ 904,469
Stairwells: Replace handrails to meet code	\$ 21,535	\$ 22,396	\$ 25,842	\$ 30,149
Stairwells: Provide safety treads and nosing	\$ 15,505	\$ 16,125	\$ 18,606	\$ 21,707
	\$ 3,160,146	\$ 3,286,552	\$ 3,792,175	\$ 4,424,204

Mechanical/Plumbing

Gut and replace all steam heating equipment	\$ 430,700	\$ 447,927	\$ 516,839	\$ 602,979
Replace all steam and condensate piping with new heating water piping	\$ 143,567	\$ 149,309	\$ 172,280	\$ 200,993
Replacement of perimeter office Nesbitt roommate steam coil unit vents is not practical nor convertible to hw	\$ 143,567	\$ 149,309	\$ 172,280	\$ 200,993
Blank off room level ventilation louvers. Replace with central VAV AHU with hot water reheat coils	\$ 71,783	\$ 74,655	\$ 86,140	\$ 100,497
Locate AHU in 1st floor room converted to mechanical room.	\$ 28,713	\$ 29,862	\$ 34,456	\$ 40,199
Duct from central AHU to all rooms.	\$ 299,767	\$ 311,758	\$ 359,720	\$ 419,674
Replace pneumatic controls with DDC throughout.	\$ 86,140	\$ 89,585	\$ 103,368	\$ 120,596
Floor 1:				
Replace steam boiler with (2) hot water condensing boilers	\$ 358,916	\$ 373,273	\$ 430,700	\$ 502,483
Replace boiler gravity venting with direct piped sealed combustion and venting	\$ 107,675	\$ 111,982	\$ 129,210	\$ 150,745
Replace boiler steam specialties with (2) primary/standby heating water system pumps	\$ 43,070	\$ 44,793	\$ 51,684	\$ 60,298
Assume typical first floor spaces are heating only.				
Heating only equipment replacement (was steam, now hot water) includes 4 hung radiators, 4 unit heaters	\$ 229,706	\$ 238,895	\$ 275,648	\$ 321,589
Replace printing exhaust based on equipment heat gain, minimum 0.5 cfm/sf.	\$ 21,535	\$ 22,396	\$ 25,842	\$ 30,149
In printing rooms, add fan coils with ducted outdoor air ducted ventilation to balance exhaust requirements.	\$ 43,070	\$ 44,793	\$ 51,684	\$ 60,298
In copy room, add exhaust min 0.5 cfm/sf.	\$ 21,535	\$ 22,396	\$ 25,842	\$ 30,149
Heating/cooling - 2 offices and core located copy room - remove window AC units. Feed from central AHU.	\$ 143,567	\$ 149,309	\$ 172,280	\$ 200,993
Floor 2:				
Remove (1) open office non functional Trane blower (steam) coil unit	\$ 28,713	\$ 29,862	\$ 34,456	\$ 40,199
Remove (11) perimeter office Nesbitt modular roommate steam coil unit vents, and window AC units.	\$ 47,377	\$ 49,272	\$ 56,852	\$ 66,328
Remove (2) sections of steam fin tube radiation.	\$ 8,614	\$ 8,959	\$ 10,337	\$ 12,060
New VAV RH central system to serve all floor 2 spaces.	\$ 43,070	\$ 44,793	\$ 51,684	\$ 60,298
Floor 3:				
Remove (8) sections of fin tube radiation and window AC units. Feed from central VAV AHU.	\$ 34,456	\$ 35,834	\$ 41,347	\$ 48,238
Replace (2) central heating only (fin tube) rooms, with heating/cooling provided from central VAV AHU.	\$ 28,713	\$ 29,862	\$ 34,456	\$ 40,199
Replace (2) above ceiling pneumatically controlled steam AHUs with similar DDC controlled HW AHUs	\$ 114,853	\$ 119,447	\$ 137,824	\$ 160,794
Replace cooling from these conference room AHUs with DX cooling coils and roof mounted CUs.	\$ 86,140	\$ 89,585	\$ 103,368	\$ 120,596
	\$ 2,565,246	\$ 2,667,856	\$ 3,078,295	\$ 3,591,345

Electrical

Replace older 100A branch circuit panelboards with new 100A branch circuit panelboards	\$ 74,655	\$ 77,641	\$ 89,585	\$ 104,516
Replace older 600A main distribution panelboard with new 600A main distribution panelboard.	\$ 44,506	\$ 46,286	\$ 53,407	\$ 62,308
Re-feed existing "emergency" panelboard from MDP (rather than tap ahead of main service disconnect). 3P100A feeder from MDP.	\$ 43,070	\$ 44,793	\$ 51,684	\$ 60,298
Upgrade motor starters to VFD's where possible.	\$ 32,302	\$ 33,595	\$ 38,763	\$ 45,223
Replace all existing light fixtures with LED. Include code-compliant egress coverage as spare quantity of existing is likely not code compliant for egress.	\$ 1,249,029	\$ 1,298,990	\$ 1,498,834	\$ 1,748,640
Provide lighting controls and dimming throughout building.	\$ 174,864	\$ 181,859	\$ 209,837	\$ 244,810
Increase office receptacle quantity, approximately 2 per office staff.	\$ 23,330	\$ 24,263	\$ 27,995	\$ 32,661
Install approximately two additional exterior security cameras.	\$ 7,178	\$ 7,465	\$ 8,614	\$ 10,050
Replace existing fire alarm system with new district-standard National Time & Signal system.	\$ 49,961	\$ 51,960	\$ 59,953	\$ 69,946

\$ 1,698,894 \$ 1,766,850 \$ 2,038,673 \$ 2,378,452

\*TOTALS

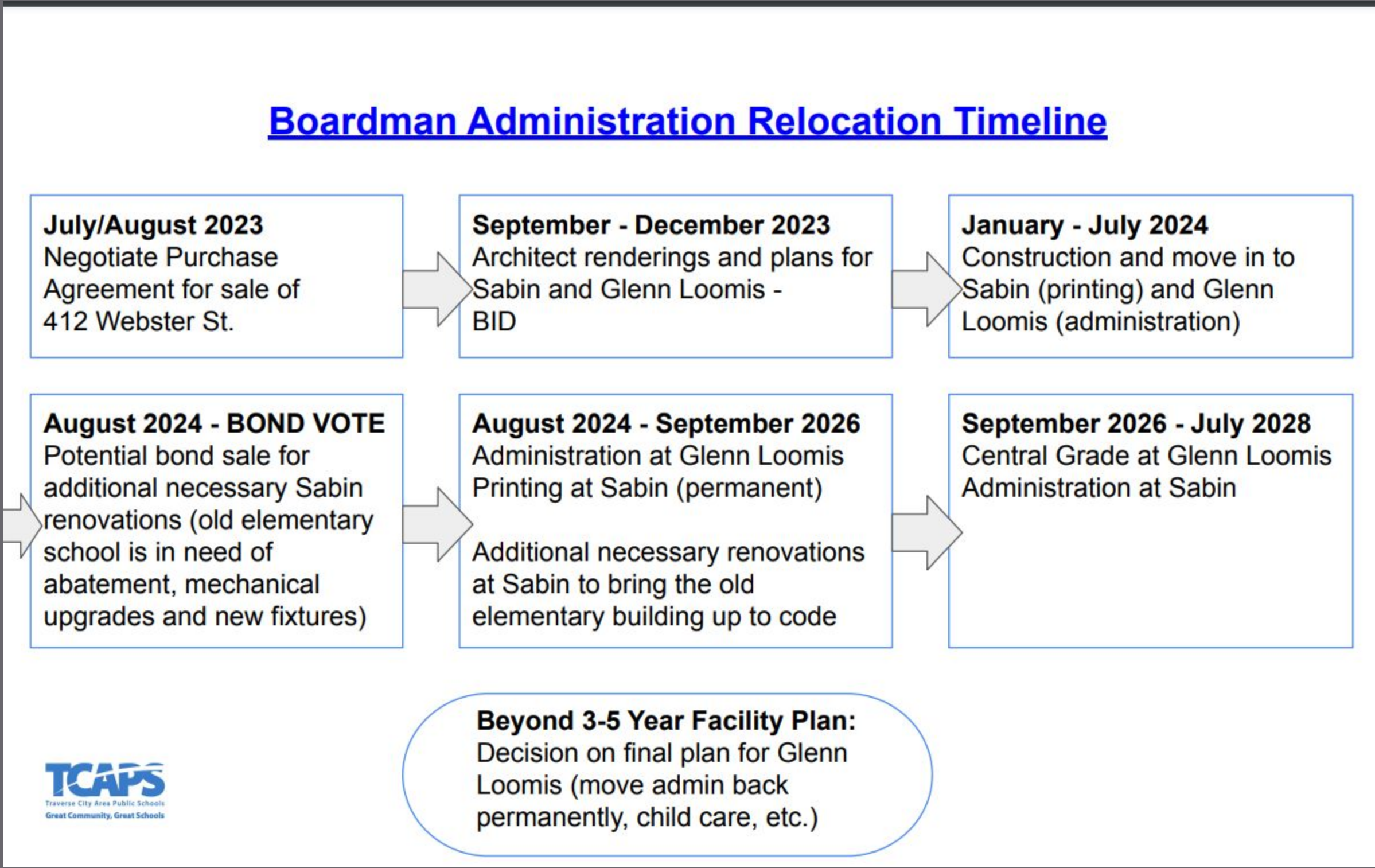
\*(NOT INCLUDED: ARCHITECT, ENGINEERING, CONSTRUCTION MANAGEMENT FEES, CONTINGENCIES, ETC.)

\$ 7,424,286 \$ 7,721,258 \$ 8,909,144 \$ 10,394,001

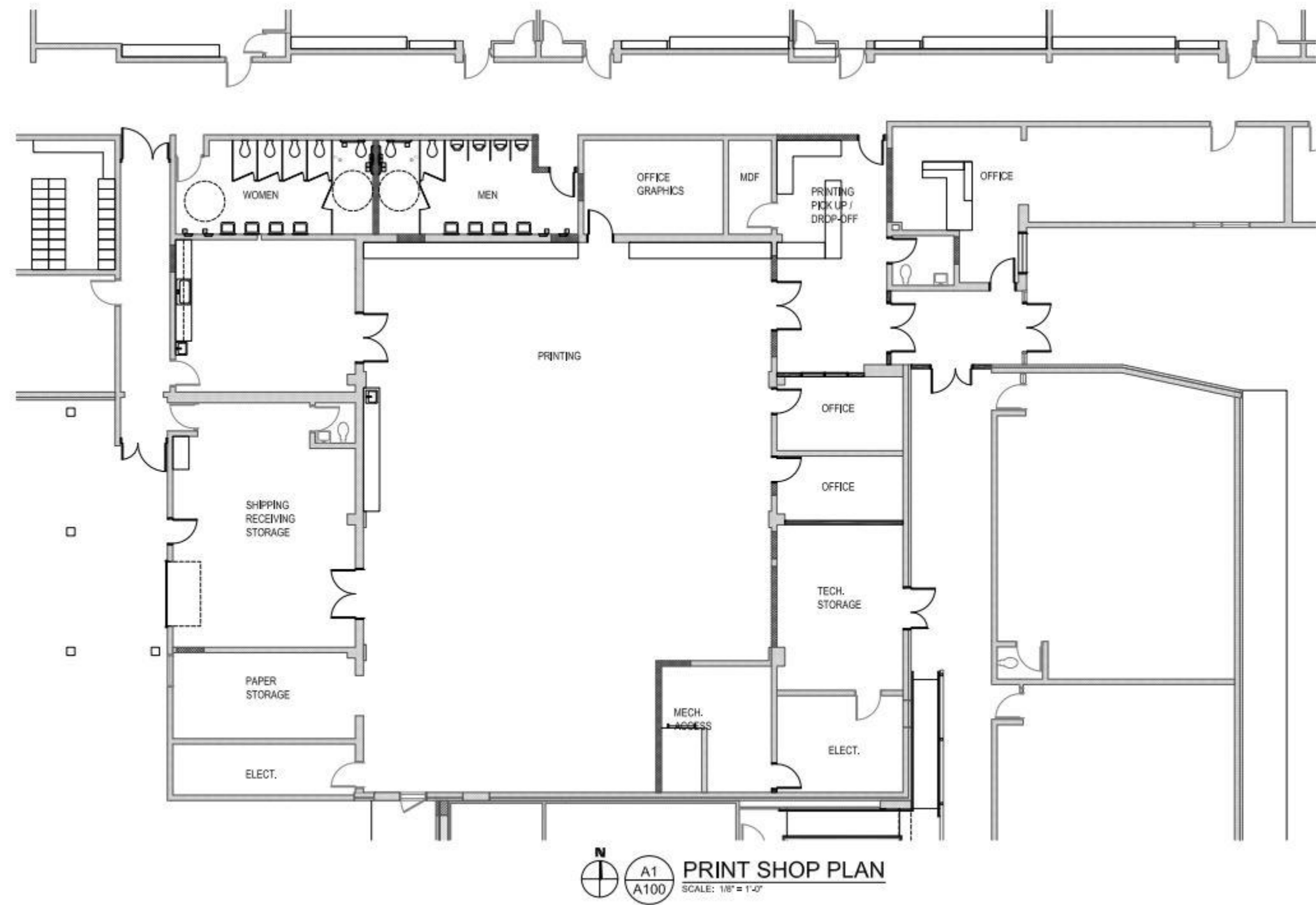


# Administration Relocation Timeline

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