Capital Improvement Projects

Fiscal Years

2020

2021

2022

2023

2024

*Board of Education Approved **10.21.19***

Executive Summary

Overview:

The Capital Improvement Plan (CIP) is a strategic plan designed to forecast capital needs and preserve the condition of buildings and property. Capital planning through systematic evaluations of building infrastructure is a vital tool that links the school district needs and the financial capacity of the Town. It is a living document which will be updated year to year depending on; the condition of infrastructure(s); possible alternative solutions which mitigate the need for a larger expense; an educational/programmatic need; or a risk management or health and safety assessment.

Methodology:

The prioritization and opines as to when a project is necessary was based on site observations, research and professional judgement along with data from AssetCalc and other reports. Probable costs listed are based on estimates utilizing RS Means estimating guidelines, trends from recent and similar projects or from professional quoted estimates. Actual costs are likely to vary based on the timeline of original costs, State Prevailing Wage standards, economic conditions and/or assumptions unique to a particular project.

Proposed Capital Improvement Plan

Summary by Year (Glastonbury Public Schools)

FY	Location	Description	Est. Cost
2021	GHS	Construction Services – Field House ($1M allocated FY19-20)	$1,200,000
2021	Hopewell	Parking Lot Re-Paving & Curbing	$200,000
2021	Smith Middle	Moisture Mitigation Design and Replacement of SMS Gymnasium Floor	$200,000
		Sub-Total FY 2020-2021	**$1,600,000**
2022	GHS	Parking Lot Re-Paving & Curbing - Area 2 (post Field House construction)	$200,000
2022	Gideon Welles	Auditorium Seat Replacement	$100,000
2022	BB/HA/NAB/HO	Steel Locker Replacements (1,006)	$460,000
2022	Gideon Welles	Design - Roof Replacement **	$75,000
2022	Naubuc	A&E Design Services - Boiler & Heating System Replacement	$75,000
2022	Naubuc	A&E Design Services - Reconfiguration of Open Space Classrooms	$75,000
		Sub-Total FY 21-22	**$985,000**
2023	GHS	Parking Lot Re-Paving & Curbing - Area 3, (Senior Lots)	$200,000
2023	Gideon Welles	Replacement of RT Air Handling Units & RT Exhaust Fans	$250,000
2023	Gideon Welles	Construction Services - Boiler Replacement & Energy Management Controls	$950,000
2023	Naubuc	Construction Services - Reconfiguration of Open Space Classrooms	TBD
		Sub-Total FY 22-23	**$1,400,000**
2024	Naubuc	Construction Services - Boiler & Heating System Replacement	$850,000
2024	Hebron Ave	Parking Lot Re-Paving & Curbing	$290,000
2024	GHS	Parking Lot Re-Paving & Curbing -Area 4 (Baldwin Lot & Front/Rear)	$200,000
		Sub-Total FY 23-24	**$1,340,000**
2025	Gideon Welles	Roof Replacement**	$1,984,000
		Sub-Total FY 24-25	**$1,984,000**
Five Year Total			**$7,309,000**

***Roof replacements greater than 20 years are eligible for State reimbursement*

Update of Completed CIP and Extended Life Cycles

The need for capital outlay can be delayed (with some systems) due to the implementation of a comprehensive preventative maintenance program. A re-evaluation of conditions to infrastructure along with the preventative maintenance has allowed us to extend the life cycle of certain building systems and therefore delay some capital expenses. Some example projects are listed below.

a	*b*	*c*	*d*	*e*	*f*	*g*
ITEM #	**CIP Project**	**Last Installation**	**Asset Calc Estimated Replacement**	**Estimated Planned Construction Date**	**Estimated Extended Life Cycle (yrs.)**	**Estimated Deferred Capital Cost (Incl 2%/yr.)**
1	Boiler Systems Gideon Welles (2)	1967	2011	2022	11	$950,000
2	Boiler Systems Naubuc (3)	1983	2008	2023	15	$925,000
3	Boiler Systems Eastbury (2)	1996	2020	2030	10	$1,966,500
4	Boiler Systems Smith (2)	2001	2026	2031	5	$1,121,000
5	Boiler Systems High (4)	2005	2030	2035	5	$2,394,000
6	Boiler Systems Nayaug (2)	2007	2032	2037	5	$1,235,000
7	Boiler Systems Buttonball (3)	2011	2036	2041	5	$1,966,500
8	Boiler Systems Hopewell (2)	2012	2037	2042	5	$1,330,000
9	Boiler Systems GEHMS (3)	2012	2037	2042	5	$1,995,000
10	Boiler Systems Hebron Ave (2)	2013	2038	2043	5	$1,349,000
11	Roof Replacement Gideon Welles	1991	2016	2024	8	$1,984,000
12	Roof Replacement High School	91,98 & 05	2016	2027, 2030, 2035	11+	$7,040,000
13	Roof Replacement Naubuc	1990, 96	2021	2028	7	$1,350,000
14	Roof Replacement Hebron Ave	1988, 2015	2025	2030	5	$1,375,000
15	Roof Replacement Smith MS	2000	2020	2032	12	$3,820,000
16	Roof Replacement Eastbury	1994	2014	2040	26	$1,150,000
17	Roof Replacement Buttonball	1996	2016	2040	24	$1,400,000
18	Roof Replacement Hopewell	1996	2016	2040	24	$1,300,000
19	Roof Replacement Nayaug	2008	2028	2040	12	$1,200,000
20	Roof Replacement GEHMS	2011	2031	2040	15	$1,125,000

Note on Roofs: Recommended future new roof systems to be EPDM for longevity and maintenance benefits.

CIP Projects Eliminated or Substantially Changed:

A project within a CIP may be eliminated due to a re-evaluation of conditions or because of alternative methods or engineering solutions. Although some of the results listed below have mitigated project costs, the methodology and design approach still yield similar life cycle results. These projects are listed below.

1. Fire Code Violations – Eliminated: CIP Savings **$100,000** / Yr.*

   A comprehensive review of all Fire Code Violations was completed with the Town Fire Marshal's Office. Virtually all code violations were corrected with the exception of a few items that would require significant changes to building areas which would not be structurally feasible. The need for capital funds to address any fire code compliance items each year was eliminated as most can be handled through the preventative maintenance program.

CIP Projects Eliminated or Substantially Changed: (continued)

2. Fire Alarm Panel-Replacement GW/BB/HO/HE: - CIP Savings **$200,000***
   The main fire control panels in these schools are original and do not have the ability to inform first responders of the exact location of the smoke or fire. These types of system are known as "Fully Addressable" systems, whereby each device; a smoke detector, heat detector, pull station, Kitchen Ansul and tamper/flow switches will have a specific ID address and location which is identified at the same time the alarm is triggered. This is extremely beneficial to first responders as it gives them the exact location of the device in alarm versus only a "zone identification" where most "fire compartment zones" could have 30-50 devices in one zone. The benefit to an updated fully addressable Fire Alarm system is to be able to have immediate and specific notification so quick response can be achieved, likely where smoke/fire may not be immediately visible and can develop into a larger life safety issue. Addressable systems also are of benefit to shorten the trouble shooting time to locate a device that has failed and has tripped an alarm.

3. Gideon Welles Septic Tank Replacement – Eliminated: CIP Savings $650,000
   Upon a review of previous inspections of the septic tank and re-inspection of the interior concrete surfaces the structural integrity of the walls was determined to be in good condition. We were able to replace the septic pump systems and the controls which operate the pump chamber with new electronic controls. The tank system was restored for **$60,873***. Annual inspections and maintenance will avoid any need to replace the structure.

4. Eastbury Potable Water Tank Replacement – Eliminated: CIP Savings $750,000
   Every five years, hydro-pneumatic water storage tanks must be drained and inspected per health code. Pressurized water tanks must be inspected for structural integrity and condition of the interior lining for safety and health as they are pressurized vessels. Pressurized water tanks operate with controls which balance 40 percent air and 60 percent water. The vessel is under constant pressure and that allows the water to travel through building pipes when occupants use faucets, etc. Upon re-inspection, it was determined the tank condition, while good, was no longer recommended to be utilized as a pressurized water tank. Tank experts were brought in to determine if the tank could be restored and modified to an “un-pressurized water holding tank” or atmospheric tank. The proposed engineering solution, also approved by the State Health Department, consisted of converting the tank to an atmospheric tank. This would eliminate the pneumatic controls with new mechanical water circulating pipes. This restoration coupled with new controls was the appropriate engineering solution at a cost of **$49,231***. By modifying this tank to an un-pressurized water holding tank, we should expect the tank to last another 50 years. Replacing the entire system with a new pneumatic water tank and controls would incur a capital cost of about $750K.

CIP Projects Eliminated or Substantially Changed: (continued)

5. Air Conditioning of Four Elementary Schools - Re-Design & Installation: CIP Savings $16M to $2.3M
   Original design consisted of traditional ductwork and extensive renovations throughout the elementary schools. This approach would require significant capital outlay and would impact virtually all codes due to the extensive alterations required to achieve the design. As air conditioning is generally needed for 5 to 6 months out of the school year, an alternative design approach was considered. The design of a "ductless air conditioning" system could be accomplished with very little impact to the interior spaces, would not impact fire code and sprinkler modifications and could be installed within a few months utilizing after school hours. These systems perform equally efficient to traditional ducted systems and are also tied to the building management systems for optimal operational control.

6. Under Ground Fuel Storage Tanks (UST) High School, Naubuc & Eastbury – CIP Savings **$75,000***
   In accordance to EPA & State regulations, all UST's which have been in place equal to the years of the Tank Manufacturer's warranty, must be removed or replaced. Over the past several years, during boiler replacement projects, UST's were removed and new heating systems were fueled solely by natural gas eliminating the need for oil tanks. Due to regulations for UST's, they must be removed or replaced once they reach the manufacturer's warranty. This cost, coupled with the benefit of less expensive and cleaner natural gas, we find no payback to replace UST or to fuel a school with heating oil. The remaining UST's are (2) at Naubuc, Eastbury, GHS and the Field House. In 2018 the school district removed of all remaining UST's, backfill and restoration of the site. It should be noted that the Field House property currently does not have natural gas piping available, however we are anticipating a NG service line in the near future and are working with the Town. Until natural gas is available we will delay the UST removal at the Field House.

7. GHS Pool Dehumidification RTU – CIP Savings **$150,000***
   The indoor pool is used and operates 24/7, 365 days per year in order to maintain adequate chemical levels and compliance with Health codes. It is a critical structure for the school's PE program and Swim Teams but is also used by our community extensively. The relative humidity and overall ventilation system is controlled by two gas fired roof top units that cycle and maintain comfortable air temperatures within the pool deck and spectator seating areas. This system also eliminates the corrosive atmosphere within a pool space. Units had developed significant failures and therefore replaced by the school district in 2018.

8. Fire Alarm Panel Replacement Smith MS - CIP Savings **$149,312***
   The main fire control panel at Smith Middle School was replaced during the summer of 2019 with a state-of-art "Fully Addressable" system. The building is quite large with over 600 devices (smoke/heat detectors, pull stations, sprinkler flow switches) which all have a specific ID address which is identified at the time the alarm is triggered. This is extremely beneficial to first responders as it gives them the exact location of the device in alarm versus only a "zone identification". Addressable systems also are of benefit to shorten the trouble shooting time to locate a device that have failed or need maintenance.

CIP Projects Eliminated or Substantially Changed: (continued)

9. Diesel Tank for Emergency Generator – GHS- CIP Savings **$28,280***
   With the removal of the UST a new above ground diesel tank was installed for the purpose of operating the emergency generator and to meet mandated shelter operation requirements.

10. Emergency Generator Docking Station – Bus Yard – CIP Savings **$11,000***
    In conjunction to the requirements of Town Shelter Operations, the bus yard now has the high voltage docking station which provides the ability to connect the Town's portable emergency generator to the bus yard in order to operate buses during an emergency and or shelter condition. Buses require power for fueling stations, operations and engine heaters. This is part of the Town Emergency operations plan.

11. Exterior Doors and Frames – GHS Gymnasium – CIP Savings **$110,000***
    Deterioration to metal doors and frames in the gymnasium coupled with the inability to secure the building elevated the priority of this project. New aluminum insulated doors and frames were installed during the summer of 2019. This will provide a secure exterior as well as safe and functional exiting for 20 years or more.

*Funded by Board of Education Operating Budget under Special Projects or 1% fund.