



Capital Improvement Plan
FY2019-FY2023

Glossary of Financial Terms

Part I

Glossary of Financial Terms

Appropriation – An authorization granted by a town meeting, city council or other legislative body to expend money and incur obligations for specific public purposes. An appropriation is usually limited in amount and as to the time period within which it may be expended.

Bond – A means to raise money through the issuance of debt. A bond issuer/borrower promises in writing to repay a specified sum of money, alternately referred to as face value, par value or bond principal, to the buyer of the bond on a specified future date (maturity date), together with periodic interest at a specified rate. The term of a bond is always greater than one year.

Bond Authorization – The action of town meeting or a city council authorizing the executive branch to raise money through the sale of bonds in a specific amount and for a specific purpose. Once authorized, issuance is by the treasurer upon the signature of the mayor, or selectmen.

Bond Issue – The actual sale of the entire, or a portion of, the bond amount authorized by a town meeting or city council.

Bond Rating (Municipal) – A credit rating assigned to a municipality to help investors assess the future ability, legal obligation, and willingness of the municipality (bond issuer) to make timely debt service payments. Stated otherwise, a rating helps prospective investors determine the level of risk associated with a given fixed-income investment. Rating agencies, such as Moody's and Standard and Poor's, use rating systems, which designate a letter or a combination of letters and numerals where AAA is the highest rating and C1 is a very low rating.

Bonds Authorized and Unissued – Balance of a bond authorization not yet sold. Upon completion or abandonment of a project, any remaining balance of authorized and unissued bonds may not be used for other purposes, but must be rescinded by town meeting or the city council to be removed from community's books.

Capital Improvements Program – A blueprint for planning a community's capital expenditures that comprises an annual capital budget and a five-year capital program. It coordinates community planning, fiscal capacity and physical development. While all of the community's needs should be identified in the program, there is a set of criteria that prioritizes the expenditures.

Capital Outlay – The exchange of one asset (cash) for another (capital asset), with no ultimate effect on net assets. Also known as "pay as you go," it is the appropriation and use of available cash to fund a capital improvement, as opposed to incurring debt to cover the cost.

Chapter 90 Highway Funds – State funds derived from periodic transportation bond authorizations and apportioned to communities for highway projects based on a formula under the provisions of MGL Ch. 90 §34. The Chapter 90 formula comprises three variables: local road mileage (58.33 percent) as certified by the Massachusetts Highway Department (MHD), local employment level (20.83 percent) derived the Department of Employment and Training (DET), and population estimates (20.83 percent) from the US Census Bureau. Local highway projects are approved in advance. Later, on the submission of certified expenditure reports to MHD, communities receive cost reimbursements to the limit of the grant.

Community Preservation Fund – A special revenue fund established pursuant to MGL Ch. 44B to receive all monies collected to support a community preservation program, including but not limited to, tax surcharge receipts, proceeds from borrowings, funds received from the Commonwealth, and proceeds from the sale of certain real estate.

Debt Authorization – Formal approval by a two thirds vote of town meeting or city council to incur debt, in accordance with procedures stated in MGL Ch. 44 §§1, 2, 3, 4a, 6-15.

Debt Exclusion – An action taken by a community through a referendum vote to raise the funds necessary to pay debt service costs for a particular project from the property tax levy, but outside the limits under Proposition 2½. By approving a debt exclusion, a community calculates its annual levy limit under Proposition 2½, then adds the excluded debt service cost. The amount is added to the levy limit for the life of the debt only and may increase the levy above the levy ceiling.

Debt Service – The repayment cost, usually stated in annual terms and based on an amortization schedule, of the principal and interest on any particular bond issue.

Enterprise Fund – An enterprise fund, authorized by MGL Ch. 44 §53F½, is a separate accounting and financial reporting mechanism for municipal services for which a fee is charged in exchange for goods or services. It allows a community to demonstrate to the public the portion of total costs of a service that is recovered through user charges and the portion that is subsidized by the tax levy, if any. With an enterprise fund, all costs of service delivery--direct, indirect, and capital costs—are identified. This allows the community to recover total service costs through user fees if it chooses. Enterprise accounting also enables communities to reserve the "surplus" or net assets unrestricted generated by the operation of the enterprise rather than closing it out to the general fund at year-end. Services that may be treated as enterprises include, but are not limited to, water, sewer, hospital, and airport services.

Free Cash (Also Budgetary Fund Balance) – Remaining, unrestricted funds from operations of the previous fiscal year including unexpended free cash from the previous year, actual receipts in excess of revenue estimates shown on the tax recapitulation sheet, and unspent amounts in budget line-items. Unpaid property taxes and certain deficits reduce the amount that can be certified as free cash. The calculation of free cash is based on the balance sheet as of June 30, which is submitted by the community's auditor, accountant, or comptroller. Important: free cash is not available for appropriation until certified by the Director of Accounts.

Levy – The amount a community raises through the property tax. The levy can be any amount up to the levy limit, which is re-established every year in accordance with Proposition 2½ provisions.

Local Appropriating Authority – In a town, the town meeting has the power to appropriate funds, including the authorization of debt. In a city, the city council has the power upon the recommendation of the mayor.

Long-Term Debt – Community borrowing, or outstanding balance at any given time, involving loans with a maturity date of 12 months or more.

Net Assets Unrestricted (formerly Retained Earnings) – An equity account reflecting the accumulated earnings of an enterprise fund that may be used to fund capital improvements, to reimburse the general fund for prior year subsidies, to reduce user charges and to provide for enterprise revenue deficits (operating loss).

Short-Term Debt – Outstanding balance, at any given time, on amounts borrowed with a maturity date of 12 months or less.

Stabilization Fund – A fund designed to accumulate amounts for capital and other future spending purposes, although it may be appropriated for any lawful purpose (MGL Ch. 40 §5B). Communities may establish one or more stabilization funds for different purposes and may appropriate into them in any year an amount not to exceed ten percent of the prior year's tax levy. The total of all stabilization fund balances shall not exceed ten percent of the community's equalized value, and any interest shall be added to and become a part of the funds. A two-thirds vote of town meeting or city council is required to establish, amend the purpose of, or appropriate money into or from the stabilization fund.

Capital Improvement Plan
Five (5) Year Plan FY2018-FY2022
Part II

**TOWN OF TEWKSBURY
CAPITAL PLANNING PROGRAM
FISCAL YEARS 2019-2023
SUMMARY**

DEPARTMENT	PROJECT/PROGRAM	FUNDING SOURCE	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Facilities and Grounds	Vehicles and Equipment	R&A/Stab. Fund/CPA Funds/Free Cash	38,277	-	-	-	-	38,277
	Police Station	R&A/Stab. Fund/CPA Funds/Free Cash	-	25,000	75,000	-	-	100,000
	Library	R&A/Stab. Fund/CPA Funds/Free Cash	-	150,000	25,000	150,000	400,000	725,000
	Town Hall and Town Hall Annex	R&A/Stab. Fund/CPA Funds/Free Cash	-	-	-	25,000	25,000	50,000
	Senior Center	R&A/Stab. Fund/CPA Funds/Free Cash	-	25,000	70,000	50,000	-	145,000
	Recreation Fields and Facilities	R&A/Stab. Fund/CPA Funds/Free Cash	38,277	500,000	320,000	375,000	575,000	1,808,277
	Total Facilities and Grounds							
Fire Department	New Ambulance and Equipment	R&A/Stab. Fund/Free Cash	-	240,000	-	240,000	-	480,000
	New Rescue Truck	R&A/Stab. Fund/Free Cash	-	-	90,000	-	-	90,000
	Response/Administrative Vehicle (Car 1)	R&A/Stab. Fund/Free Cash	40,000	-	-	-	-	40,000
	North Fire Station Renovation	R&A/Stab. Fund/Free Cash	-	-	-	1,250,000	-	1,250,000
	South Fire Station Renovations	R&A/Stab. Fund/Free Cash	-	40,000	-	-	50,000	90,000
	Refurbish 2010 Seagrave Fire Engine	R&A/Stab. Fund/Free Cash	-	-	-	-	75,000	75,000
	Total Fire Department		40,000	280,000	90,000	1,490,000	125,000	2,025,000
Public Works Department	Stormwater and Drainage							
	Stormwater and Drainage Repair and Maintenance	R&A/Stab. Fund/FC/Borrowing/CH90	390,000	940,000	220,000	230,000	230,000	2,010,000
	Stormwater Compliance	R&A/Stab. Fund/FC/Borrowing/CH90	50,000	300,000	300,000	300,000	250,000	1,200,000
	Stormwater and Drainage Improvement Projects	R&A/Stab. Fund/FC/Borrowing/CH90	-	-	-	-	-	-
	Stormwater and Drainage Project Development	R&A/Stab. Fund/FC/Borrowing/CH90	50,000	20,000	35,000	35,000	35,000	175,000
	Total Stormwater and Drainage		490,000	1,260,000	555,000	565,000	515,000	3,385,000
	Public Works Department	Transportation						
Pavement Management Preventative Maintenance		R&A/Stab. Fund/FC/Borrowing/CH90	50,000	30,000	350,000	350,000	350,000	1,130,000
Pavement Management Reconstruction/Resurfacing		R&A/Stab. Fund/FC/Borrowing/CH90	800,000	400,000	445,000	445,000	445,000	2,535,000
Sidewalks		R&A/Stab. Fund/FC/Borrowing/CH90	650,000	250,000	650,000	650,000	250,000	2,450,000
Improvement Projects		R&A/Stab. Fund/FC/Borrowing/CH90	135,000	235,000	200,000	-	-	570,000
Project Development		R&A/Stab. Fund/FC/Borrowing/CH90	58,000	200,000	50,000	-	50,000	358,000
Total Transportation			1,693,000	1,115,000	1,695,000	1,445,000	1,095,000	7,043,000
DPW Facilities/Misc.	DPW Facility Renovations and Upgrades	R&A/Stab. Fund/FC/Borrowing	7,042,000	-	-	-	-	7,042,000
	Total DPW Facilities/Misc.		7,042,000	-	-	-	-	7,042,000
	Total DPW		10,031,000	2,885,000	2,680,000	2,385,000	2,145,000	20,126,000
Public Works Department	Fleet and Equipment							
	Public Works (General Fund)	R&A/Stab. Fund/Free Cash	806,000	510,000	430,000	375,000	535,000	2,656,000
	Total Fleet and Equipment		806,000	510,000	430,000	375,000	535,000	2,656,000
Grand Total DPW		10,031,000	2,885,000	2,680,000	2,385,000	2,145,000	20,126,000	
Grand Total General Fund		10,109,277	3,665,000	3,090,000	4,250,000	2,845,000	23,959,277	

DEPARTMENT	PROJECT/PROGRAM	FUNDING SOURCE	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Sewer Enterprise Fund								
Public Works (Sewer)	Inflow and Infiltration I/I control	Borrowing/R&A/Retained Earnings	350,000	350,000	350,000	550,000	550,000	2,150,000
Public Works (Sewer)	Sewer Pump Station Improvements	Borrowing/R&A/Retained Earnings	205,000	125,000	150,000	50,000	-	530,000
Public Works (Sewer)	Collections System Upgrades	Borrowing/R&A/Retained Earnings	-	-	-	-	-	-
Public Works (Sewer)	Fleet and Equipment Replacement Program	R&A/Ent. Fund	-	-	-	-	-	-
Total Sewer Enterprise Fund			555,000	475,000	500,000	600,000	550,000	2,680,000
Water Enterprise Fund								
Public Works (Water)	Hydrant Replacement Program	R&A Ent. Fund/Retained Earnings	125,000	125,000	125,000	125,000	125,000	625,000
Public Works (Water)	Water Distribution System Improvements	Borrowing/R&A/Retained Earnings	2,000,000	2,100,000	2,000,000	2,100,000	2,000,000	10,200,000
Public Works (Water)	Water Tank Maint. And Upgrades	Borrowing/R&A/Retained Earnings	90,000	1,000,000	-	-	-	1,090,000
Public Works (Water)	Fleet and Equipment Replacement Program	R&A Ent. Fund/Retained Earnings	26,000	-	55,000	-	55,000	136,000
Total Water Enterprise Fund			2,241,000	3,225,000	2,180,000	2,225,000	2,180,000	12,051,000
Public Works Water/Sewer	Fleet and Equipment Replacement Program	R&A/Ent. Fund	175,000	150,000	85,000	210,000	-	620,000
Grand Total All Capital Projects Per Year			13,080,277	7,515,000	5,855,000	7,285,000	5,575,000	
Grand Total All Projects All Years								39,310,277

TOWN OF TEWKSBURY
CAPITAL PLANNING PROGRAM
FISCAL YEARS 2019-2023
GENERAL FUND PROJECTS THAT WILL BE FUNDED BY RAISE AND APPROPRIATE, TRANSFER FROM STABILIZATION FUND, CFA FUNDS OR FREE CASH

DEPARTMENT	PROJECT/PROGRAM	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Facilities and Grounds	Vehicles and Equipment	38,277	-	-	-	-	38,277
	Police Station	-	25,000	75,000	-	-	100,000
	Library	-	150,000	25,000	150,000	400,000	725,000
	Town Hall and Town Hall Annex	-	-	-	25,000	25,000	50,000
	Senior Center	-	25,000	70,000	50,000	-	145,000
	Recreation Fields and Facilities	-	300,000	150,000	150,000	150,000	750,000
	Total Facilities and Grounds	38,277	500,000	320,000	375,000	575,000	1,808,277
Fire Department	New Ambulance and Equipment	-	240,000	-	240,000	-	480,000
	New Rescue Truck	-	-	90,000	-	-	90,000
	Response/Administrative Vehicle (Car 1)	40,000	-	-	-	-	-
	North Fire Station Renovation	-	-	-	1,250,000	-	-
	South Fire Station Renovations	-	40,000	-	-	50,000	90,000
	Refurbish 2010 Seagrave Fire Engine	-	-	-	-	75,000	75,000
	Total Fire Department	40,000	240,000	90,000	1,490,000	125,000	1,860,000
Public Works Department	Stormwater and Drainage	-	-	-	-	-	-
	Stormwater and Drainage Repair and Maintenance	-	-	-	-	-	-
	Stormwater Compliance	50,000	300,000	300,000	300,000	250,000	1,200,000
	Stormwater and Drainage Improvement Projects	-	-	-	-	-	-
	Stormwater and Drainage Project Development	-	-	-	-	-	-
	Total Stormwater and Drainage	50,000	300,000	300,000	300,000	250,000	1,200,000
	Public Works Department	Transportation	-	-	-	-	-
Pavement Management Preventative Maintenance		-	-	-	-	-	-
Pavement Management Reconstruction/Resurfacing		-	-	-	-	-	-
Sidewalks		250,000	250,000	250,000	250,000	250,000	1,250,000
Improvement Projects		35,000	35,000	-	-	-	70,000
Project Development		-	-	-	-	-	-
Total Transportation		285,000	285,000	250,000	250,000	250,000	1,320,000
DPW Facilities/Misc.	DPW Facility Renovations and Upgrades	7,042,000	-	-	-	-	7,042,000
	Total DPW Facilities/Misc.	7,042,000	-	-	-	-	7,042,000
Public Works Department	Fleet and Equipment	-	-	-	-	-	-
	Vehicles and Equipment	806,000	510,000	430,000	375,000	535,000	2,656,000
	Total Fleet and Equipment	806,000	510,000	430,000	375,000	535,000	2,656,000
	Total DPW	8,183,000	1,095,000	980,000	925,000	1,035,000	12,218,000
Grand Total General Fund	8,261,277	1,835,000	1,590,000	2,790,000	1,610,000	15,886,277	

TOWN OF TEWKSBURY
 CAPITAL PLANNING PROGRAM
 FISCAL YEARS 2019-2023
 PROJECTS FUNDED BY CHAPTER 90, OTHER MA HIGHWAY PROGRAMS AND GRANTS

DEPARTMENT	PROJECT/PROGRAM	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Public Works Department							
Stormwater and Drainage							
Public Works (General Fund)	Stormwater and Drainage Repair and Maintenance	390,000	940,000	220,000	230,000	230,000	2,010,000
Public Works (General Fund)	Stormwater Compliance	-	-	-	-	-	-
Public Works (General Fund)	Stormwater and Drainage Improvement Projects	-	-	-	-	-	-
Public Works (General Fund)	Stormwater and Drainage Project Development	50,000	20,000	35,000	35,000	35,000	175,000
Total Stormwater and Drainage		440,000	960,000	255,000	265,000	265,000	2,185,000
Public Works Department							
Transportation							
Public Works (General Fund)	Pavement Management Preventative Maintenance	50,000	30,000	350,000	350,000	350,000	1,130,000
Public Works (General Fund)	Pavement Management Reconstruction/Resurfacing	800,000	400,000	445,000	445,000	445,000	2,535,000
Public Works (General Fund)	Sidewalks	400,000	-	400,000	400,000	-	1,200,000
Public Works (General Fund)	Improvement Projects	100,000	200,000	200,000	-	-	500,000
Public Works (General Fund)	Project Development	58,000	200,000	50,000	-	50,000	358,000
Total Transportation		1,408,000	830,000	1,445,000	1,195,000	845,000	5,723,000
Total DPW		1,848,000	1,790,000	1,700,000	1,460,000	1,110,000	7,908,000

TOWN OF TEWKSBURY
CAPITAL PLANNING PROGRAM
FISCAL YEAR 2019-2023

ENTERPRISE FUND PROJECTS THAT WILL BE FUNDED BY RAISE AND APPROPRIATE OR TRANSFER FROM RETAINED EARNINGS

DEPARTMENT	PROJECT/PROGRAM	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Public Works Department							
Public Works (Sewer)	Inflow and Infiltration I/I control	350,000	350,000	350,000	550,000	550,000	2,150,000
Public Works (Sewer)	Sewer Pump Station Improvements	205,000	125,000	150,000	50,000	-	530,000
Public Works (Sewer)	Collections System Upgrades	-	-	-	-	-	-
Public Works (Sewer)	Fleet and Equipment Replacement Program	-	-	-	-	-	-
Total Sewer Enterprise Fund		555,000	475,000	500,000	600,000	550,000	2,680,000
Public Works (Water)	Hydrant Replacement Program	125,000	125,000	125,000	125,000	125,000	625,000
Public Works (Water)	Water Distribution System Improvements	2,000,000	100,000	-	100,000	-	2,200,000
Public Works (Water)	Water Tank Maint. And Upgrades	90,000	1,000,000	-	-	-	1,090,000
Public Works (Water)	Fleet and Equipment Replacement Program	26,000	-	55,000	-	55,000	136,000
Total Water Enterprise Fund		2,241,000	1,225,000	180,000	225,000	180,000	4,051,000
Public Works Water/Sewer	Fleet and Equipment Replacement Program	175,000	150,000	85,000	210,000	-	620,000
Grand Total Per Year		2,971,000	1,850,000	765,000	1,035,000	730,000	7,351,000
Grand Total All Projects All Years							

GENERAL FUND DEBT										
GENERAL FUND CAPITAL PROJECTS TO BE APPROPRIATED THROUGH BORROWING FY19-FY23										
	Amount	Debt Term	Interest Rate	FY2019	FY2020	FY2021	FY2022	FY2023		
FISCAL YEAR 2019 CAPITAL PROJECTS										
TOTAL FY19 Debt	-									
FISCAL YEAR 2020 CAPITAL PROJECTS										
TOTAL FY20 Debt	-									
FISCAL YEAR 2021 CAPITAL PROJECTS										
TOTAL FY21 Debt	-									
FISCAL YEAR 2022 CAPITAL PROJECTS										
TOTAL FY22 Debt	-									
FISCAL YEAR 2023 CAPITAL PROJECTS										
TOTAL FY23 Debt	-									
TOTAL ALL NEW DEBT										
TOTAL EXISTING DEBT AND UNISSUED DEBT		FY2018	5.765,910	6,866,266	6,859,176	6,520,935	6,392,215	6,280,900		
GRAND TOTAL EXISTING AND NEW DEBT SERVICE				6,866,266	6,859,176	6,520,935	6,392,215	6,280,900		
INCREASE OVER PREVIOUS FISCAL YEAR'S DEBT SERVICE				1,100,356	6,859,176	(345,331)	(466,962)	(240,035)		

WATER DEBT											
CAPITAL PROJECT WATER ENTERPRISE FUNDS TO BE APPROPRIATED THROUGH BORROWING FY19-FY23											
FISCAL YEARS 2019-2023											
	Amount	Debt Term	Interest Rate	FY2019	FY2020	FY2021	FY2022	FY2023			
FISCAL YEAR 2019 CAPITAL PROJECTS											
TOTAL FY19 Debt	-			-	-	-	-	-			
FISCAL YEAR 2020 CAPITAL PROJECTS											
Water Distribution Upgrades	2,000,000		3.75%		56,250	275,000	267,500	260,000			
TOTAL FY20 Debt	2,000,000			-	56,250	275,000	267,500	260,000			
FISCAL YEAR 2021 CAPITAL PROJECTS											
Water Distribution Upgrades	2,000,000		3.75%		-	56,250	275,000	267,500			
TOTAL FY21 Debt	2,000,000			-	-	56,250	275,000	267,500			
FISCAL YEAR 2022 CAPITAL PROJECTS											
Water Distribution Upgrades	2,000,000		3.75%				56,250	275,000			
TOTAL FY22 Debt	2,000,000			-	-	-	56,250	275,000			
FISCAL YEAR 2023 CAPITAL PROJECTS											
Water Distribution Upgrades	2,000,000		3.75%								
TOTAL FY23 Debt	2,000,000			-	-	-	-	-			

TOTAL ALL NEW DEBT	8,000,000			-	56,250	331,250	598,750	858,750			
TOTAL EXISTING DEBT WATER				2,578,515	2,291,946	2,428,146	2,536,807	2,638,725			
GRAND TOTAL EXISTING AND NEW DEBT SERVICE				2,578,515	2,348,196	2,759,396	3,135,557	3,497,475			
INCREASE OVER PREVIOUS FISCAL YEAR'S DEBT SERVICE				(288,761)	(230,319)	411,200	376,161	361,918			

**TOWN OF TEWKSBURY
CAPITAL PLANNING PROGRAM
FISCAL YEARS 2019-2023
SUMMARY**

Capital Plan Summary	FY2019	FY2020	FY2021	FY2022	FY2023	Total
General Fund	10,109,277	3,665,000	3,090,000	4,250,000	2,845,000	23,959,277
Sewer Enterprise Fund	555,000	475,000	500,000	600,000	550,000	2,680,000
Water Enterprise Fund	2,241,000	3,225,000	2,180,000	2,225,000	2,180,000	12,051,000
Water/Sewer Enterprise Fund	175,000	150,000	85,000	210,000	-	620,000
Total Capital Plan Funded	13,080,277	7,515,000	5,855,000	7,285,000	5,575,000	39,310,277
Annual Capital Improvement Plan Cost						
R&A or Transfer from Stabilization Fund or Free Cash	8,261,277	1,835,000	1,390,000	2,790,000	1,610,000	15,886,277
Chapter 90, Other MA Highway Programs and Grants	1,848,000	1,790,000	1,700,000	1,460,000	1,110,000	7,908,000
General Fund Debt Service	-	-	-	-	-	-
R&A or Transfer from Sewer Enterprise Fund	555,000	475,000	500,000	600,000	550,000	2,680,000
R&A or Transfer from Water Enterprise Fund	2,241,000	1,225,000	180,000	225,000	180,000	4,051,000
R&A or Transfer Sewer/Water Enterprise Fund	175,000	150,000	85,000	210,000	-	620,000
Water Enterprise Funds Debt Service	-	56,250	331,250	598,750	858,750	1,845,000
Total Fiscal Year Cost	13,080,277	5,531,250	4,186,250	5,883,750	4,308,750	32,990,277

Capital Improvement Plan
Project Narratives
Part III

Facilities and Grounds



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: Ford F-150 Dump Truck with Plow

Date: 2/6/18

Project ID Number:

Submitted By: Vincent Bomal, Facilities and Grounds Manager

Department: Facilities and Grounds Department

First Year Submission: FY2019

Priority: 1

Description of Project:

Truck will be used to transport staff and field/facilities' equipment and tools to maintain buildings and fields.

Justification/Benefit:

Due to the amount of work to maintain town buildings a vehicle is needed for staff travel from each location and have the ability to transport equipment and tools to properly do their job.

Impact if not completed:

less efficient and effective way of undertaking work and operations.

Timeframe:

Replace. Freq:

10

Stakeholders: Facilities and Grounds employees

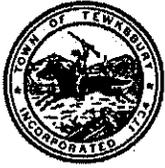
Operating Budget Impact:

Funding Source: Stabilization Fund

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Equipment	\$38,277.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Basis of Cost Projection: State Bid List



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: Facility Upgrades and Improvements -Library

Date: 2-6-18

Submitted By: Vincent Bomal, Facilities and Grounds Manager

Department: Facilities and Grounds

First Year Submission: FY2019

Description of Project: The Library was built in 1998 and over the next few years will need some interior renovations and upgrades. Fiscal Year 2020 installation of new carpet throughout the first floor including entries and offices. The current carpet is 20 years old; Fiscal Year 2021 installation of new entry in the Children’s area to provide access to the rear of the building for Children’s Events; Fiscal Year 2022 installation of new carpet throughout the entire second floor. The current carpet is 20 years old; Fiscal Year 2023 new roof which will be 25 years old and in need of replacement.

Justification/Benefit:

Addressing needed improvements and upgrades in the near future will be more cost effective in the long run and insure the longer life expectancy for the building.

Impact if not completed:

Delaying improvements will be more costly and the longer the buildings go without proper maintenance there will be a better chance of larger more costly problems occurring.

Timeframe: 6 months

Replace Freq: 20 Years

Stakeholders: Library employees and residents who utilize the building.

Operating Budget Impact: Less funding will be needed in the Department’s operating budget for ongoing maintenance. There would be risk of costly emergency repairs if the roof replacement is delayed

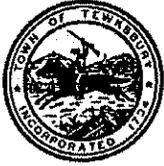
Funding Source: Tax Levy, Free Cash or Stabilization Fund

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$150,000.00	\$25,000.00	\$150,000.00	\$400,000.00	\$725,000
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$150,000.00	\$25,000.00	\$150,000.00	\$400,000.00	\$725,000

Basis of Cost Projection:

Budget number only, no estimates



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: Facility Upgrades and Improvements -Police Station

Date: 2-6-18

Submitted By: Vincent Bomal, Facilities and Grounds Manager

Department: Facilities and Grounds

First Year Submission: FY2019

Description of Project: The Police Station was built in 1996 and over the next few years will need some interior renovations and equipment replacement. In Fiscal Year 2020 renovation to the Dispatch area and install new entrance ramp. The current entry ramp needs to be replaced since it is starting to crack and breakdown; Fiscal Year 2021 install new chiller. The current chiller will be 25 years old and has met its life expectancy. The current chiller is inefficient and is beginning to have problems and is costly to repair.

Justification/Benefit:

Addressing needed improvements and upgrades in the near future will be more cost effective in the long run and insure the longer life expectancy for the building. The improvements will create a safer and more efficient building.

Impact if not completed:

Delaying improvements will be more costly and the longer the buildings go without proper maintenance there will be a better chance of larger more costly problems occurring. If the ramp is not addressed it will become a safety hazard. By not replacing the chiller the cost of repair will increase and its use will continue to create inefficiencies.

Timeframe: 6 months

Replace Freq: 20-25 Years

Stakeholders: Police Station employees and residents who utilize the building.

Operating Budget Impact: Less funding will be needed in the Department’s operating budget for ongoing maintenance.

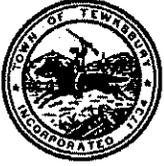
Funding Source: Tax Levy, Free Cash or Stabilization Fund

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$25,000.00	\$75,000.00	\$0.00	\$0.00	\$100,000
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$25,000.00	\$75,000.00	\$0.00	\$0.00	\$100,000

Basis of Cost Projection:

Budget number only, no estimates



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: Facility Upgrades and Improvements - Town Hall Annex

Date: 2-6-18

Submitted By: Vincent Bomal, Facilities and Grounds Manager

Department: Facilities and Grounds

First Year Submission: FY2019

Description of Project: The Town Hall Annex was built in 1967 and over the next few years and will need some interior upgrades. In Fiscal Year 2022 for the renovation and upgrade to the Kitchen area to include new cabinets, sink, painting and ceiling and tile floor and in Fiscal Year 2023 upgrades to the Restrooms to include upgrade to plumbing, new fixtures, petitions, painting and new title floor.

Justification/Benefit:

Addressing needed improvements and upgrades in the near future will be more cost effective in the long run and insure the longer life expectancy for the building.

Impact if not completed:

Delaying improvements will be more costly and the longer the buildings go without proper maintenance there will be a better chance of larger more costly problems occurring.

Timeframe: 6 months

Replace Freq: 20 Years

Stakeholders: Town Hall Annex employees and residents who utilize the building.

Operating Budget Impact: Less funding will be needed in the Department's operating budgets for ongoing maintenance.

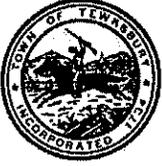
Funding Source: Tax Levy, Free Cash or Stabilization Fund

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$0.00	\$0.00	\$25,000.00	\$25,000.00	\$50,000
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$0.00	\$0.00	\$25,000.00	\$25,000.00	\$50,000

Basis of Cost Projection:

Budget number only, no estimates



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: Facility Upgrades and Improvements -Senior Center

Date: 2-6-18

Submitted By: Vincent Bomal, Facilities and Grounds Manager

Department: Facilities and Grounds

First Year Submission: FY2019

Description of Project: The original portion of the Senior Center was built in 1919 and the larger new addition was built in 2009. Over the next few years will need some interior renovations and upgrades. In Fiscal Year 2020 installation of new carpet in office and main areas; Fiscal Year 2021 renovation of restrooms to include plumbing upgrades, new fixtures, petitions, painting and title floor; Fiscal Year 2022 renovation and upgrade of kitchen area to include plumbing upgrades, new equipment, painting and title floor.

Justification/Benefit:

Addressing needed improvements and upgrades in the near future will be more cost effective in the long run and insure the longer life expectancy for the building.

Impact if not completed:

Delaying improvements will be more costly and the longer the buildings go without proper maintenance there will be a better chance of larger more costly problems occurring.

Timeframe: 6 months

Replace Freq: 20 Years

Stakeholders: Senior Center employees and residents who utilize the building.

Operating Budget Impact: Less funding will be needed in the Department's operating budget for ongoing maintenance.

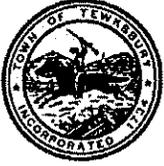
Funding Source: Tax Levy, Free Cash or Stabilization Fund

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$25,000.00	\$70,000.00	\$50,000.00	\$0.00	\$145,000
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$25,000.00	\$70,000.00	\$50,000.00	\$0.00	\$145,000

Basis of Cost Projection:

Budget number only, no estimates



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: Facility Upgrades and Improvements -Recreation Facilities

Date: 2-6-18

Submitted By: Vincent Bomal, Facilities and Grounds Manager

Department: Facilities and Grounds

First Year Submission: FY2019

Description of Project: The Livingston Street Recreation Complex and Frasca Fields are heavily used by youth sports and for Town events. Over the next few years improvements will be needed to insure the facilities are maintained properly and safe. Fiscal Year 2020, Livingston Field Complex field improvements and new field lighting and drainage repairs; Fiscal Year 2021 pave/improve parking lots; Fiscal Year 2022 remodel and expand Facilities and Grounds garage/building to include new bay, restrooms, breakroom and office; Fiscal Year 2023 pave and/or improve parking lots

Justification/Benefit:

Addressing needed improvements and upgrades in the near future will be more cost effective in the long run and insure the longer life expectancy for the facilities and insure they are safe. The current lighting is outdated and inefficient. The current drainage is not sufficient and causes the area to flood.

Impact if not completed:

Delaying improvements will be more costly and the longer the fields and facilities go without proper maintenance there will be a better chance of larger more costly problems occurring.

Timeframe: 6 months

Replace Freq: 20 Years

Stakeholders: Facilities and Grounds employees and residents who utilize the Recreation fields and facilities.

Operating Budget Impact: Less funding will be needed in the Department’s operating budgets for ongoing maintenance.

Funding Source: Tax Levy, CPA Funds, Free Cash or Stabilization Fund

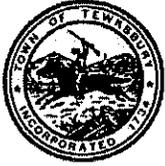
Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$300,000.00	\$150,000.00	\$150,000.00	\$150,000.00	\$750,000
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$300,000.00	\$150,000.00	\$150,000.00	\$150,000.00	\$750,000

Basis of Cost Projection:

Budget number only, no estimates

Fire Department



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: Response/Administrative Vehicle (Car 1)

Date: December 1, 2017

Project ID Number: _____

Revision Date: _____

Submitted By: Michael Hazel, Fire Chief

Department: Fire

First Year Submission: 2015

Priority: Medium

Description of Project: Replace Fire Chief's response and administrative vehicle (Car 1). The Department would purchase a Ford AWD or equivalent vehicle through the State, Plymouth County Cooperative, or Metropolitan Area Planning Council bid process. Purchase would include new emergency and safety lighting, two-way radios, and related fire officer operational equipment. The vehicle will be used by the Chief of Department to support his job functions and 24-hour response to emergencies.

Justification/Benefit: The current vehicle used by the Chief is a 2013 Ford Expedition and is in excellent condition. Being an all-wheel drive vehicle, it has proven efficient and capable for both administrative and emergency response. The vehicle will be turned over to the Deputy Fire Chief for the same use. The Deputy Chief's vehicle, a 2006 Ford Explorer in very good condition, will be turned over to the Fire Investigator for Departmental use and response. The Fire Investigator's current vehicle is a 2006 Ford Explorer in poor condition mechanically. The Fire Investigator's car was a former police patrol vehicle and was painted red several years back to serve as the Fire Prevention vehicle. It was transferred to the Fire Investigator when the new Command Vehicle (Car 3) was put into service.

Impact if not completed: Vehicle currently is in good working order and will continue in service. The Fire Investigator's vehicle is mechanically unreliable due to its previous use as a police patrol vehicle and may need to be replaced sooner than FY2019. Administrative/Response vehicles are rotated to meet the operational needs of the Department.

Timeframe: FY 2019

Replace. Freq:
5 Years

Stakeholders: Town Residents / Firefighters

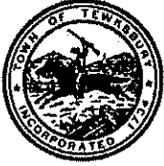
Operating Budget Impact: Increased vehicle reliability. Reduced maintenance costs.

Funding Source:

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Equipment	\$40,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40,000.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$40,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40,000.00

Basis of Cost Projection: Current State, Plymouth County, and Metropolitan Area Planning Council bid process.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: New Ambulance and Equipment

Date: December 1, 2017

Project ID Number: _____

Revision Date: _____

Submitted By: Michael Hazel, Fire Chief

Department: Fire

First Year Submission: 2017

Priority: Medium

Description of Project: Replace 2013 Ford E-450 Horton Ambulance with an ambulance that will continue to meet the needs of the Department and community. The last E-450 Ford Horton ambulance having a new chassis installed is being done now. The new ambulance requested for FY2020 will be of new construction and heavy duty design that will allow for an extended year of front line service. Currently we are restricted by the physical dimensions of the current fire station bays. With the recent approval of a new Center Fire Station, we are now able to plan for and design an ambulance that will better meet the operational needs of the Department and the community.

Justification/Benefit: The ambulance is the most frequently used emergency resources in the Department. They are driven by a variety of people under extreme conditions on a daily basis. Ambulances are prone to mechanical failure and require extensive maintenance as they age. Recent ambulances have reached approximately 75,000 to 80,000 miles in their first 2 years of use as the Town's primary response ambulance. The new ambulance design will extend the front line service life of the vehicle by one year. New ambulance regulations will be met through appropriate planning and design specification.

Impact if not completed: Costly repairs and the potential of break downs during critical emergency responses as these vehicles age. Most service work is covered under factory warranty at no cost the Department when the primary and secondary ambulances are in service. The backup ambulance, the oldest in the fleet, is only placed in service during mass casualty incidents or when one of the primary ambulances require maintenance or repair.

Timeframe: FY 2020 FY 2022

Replace. Freq:
3 Years

Stakeholders: Town Residents / Firefighters / Ambulance Patients

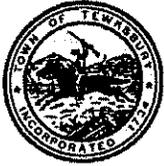
Operating Budget Impact: Reduced maintenance and increased vehicle reliability in a vehicle critical to the Department.

Funding Source:

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Equipment	\$0.00	\$240,000.00	\$0.00	\$240,000.00	\$0.00	\$480,000.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$240,000.00	\$0.00	\$240,000.00	\$0.00	\$480,000.00

Basis of Cost Projection: Current State, Plymouth County, and Metropolitan Area Planning Council bid process.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: South Fire Station Kitchen Renovation

Date: December 1, 2017

Project ID Number: _____

Revision Date: _____

Submitted By: Michael Hazel, Fire Chief

Department: Fire

First Year Submission: 2017

Priority: Medium

Description of Project: A renovation of the kitchen cabinets and appliances is needed the South Fire Station. The physical area and structure of the building will not change.

Justification/Benefit: The South Fire Station was put into service in 2001 and is currently 16 years old. It meets the current needs of the Fire Department from a size and location point of view and is overall good condition. At the time of construction, several cost saving measures were taken to stay within the allotted budget for the project. One of those cost saving measures was the kitchen cabinetry, fixtures, and appliances. The plumbing fixtures have been replaced as needed; however, the cabinet doors and base structures are showing severe wear with the 24hour use of the building. The appliances were contractor grade purchases and are currently functional. Although the building's fire alarm panel may need modification or upgrade within the next few years, this project will not require upgrades of the fire protection provided it stays within the scope of the proposed work.

Impact if not completed: The firefighters will continue to use the cabinets and appliances that are in place. The Department will continue to make repairs as needed to maximize life of these original building components.

Timeframe: FY 2020

Replace. Freq:
25 Years

Stakeholders: Town Residents / Firefighters / Hotels / State Hospital Complex / Condominiums & Apartment Complexes

Operating Budget Impact: Reduced maintenance costs, improved functionality.

Funding Source:

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$40,000.00	\$0.00	\$0.00	\$0.00	\$40,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$40,000.00	\$0.00	\$0.00	\$0.00	\$40,000.00

Basis of Cost Projection: Town's Facility Director evaluated need along with firefighters versed in construction projects.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: Rescue Truck

Date: December 1, 2017

Project ID Number:

Revision Date:

Submitted By: Michael Hazel, Fire Chief

Department: Fire

First Year Submission: 2017

Priority: Medium

Description of Project: Replace the 2000 International 4900 Rescue Truck with a smaller, more versatile vehicle to better serve the needs of the Department and the community. The new rescue truck will be reduced in size and will be designed to safely store and transport rescue equipment the Department currently utilizes.

Justification/Benefit: The current vehicle has an outdated hydraulic rescue tool system that is not capable of being cost effectively upgraded. The vehicle was built to carry a portable breathing air cascade system. This system has been removed from service due to regulation changes in the mobile filling of high pressure cylinders and the availability of a regional mobile filling station resource provided by the Tyngsboro Fire Department. The light tower on the rescue truck is not functional due to mechanical issues and the lack of availability of replacement parts. The new rescue truck design will provide compartment and storage space for current and future hazardous material and rescue related equipment.

Impact if not completed: The Fire Department will continue to operate our current rescue truck. We will continue to maintain and stock the truck with the tools and equipment it is capable of carrying. Current sub-frame corrosion will continue to be monitored and will be addressed as needed for continued safe operation.

Timeframe: FY 2021

Replace. Freq: 20 Years

Stakeholders: Town Residents / Firefighters / Hotels / State Hospital Complex / Condominiums & Apartment Complexes

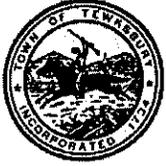
Operating Budget Impact: Reduced maintenance costs, improved flexibility in Departmental function between stations.

Funding Source:

Capital Funding Request

Table with 7 columns: Fiscal Year, 2019, 2020, 2021, 2022, 2023, Totals. Rows include Site Acquisition, Design/Engineer, Construction, Equipment, Contingency, and Totals.

Basis of Cost Projection: Estimate based on current State, Plymouth County, and Metropolitan Area Planning Council bid process.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: North Fire Station Renovation

Date: December 1, 2017

Project ID Number: _____

Revision Date: _____

Submitted By: Michael Hazel, Fire Chief

Department: Fire

First Year Submission: 2017

Priority: Medium

Description of Project: A renovation of the first floor of the North Fire Station and the addition of a second floor above the living quarters. The apparatus bays and footprint of the building will not change. The second floor addition will provide for safer and more functional use of the station by the firefighters assigned there.

Justification/Benefit: The North Fire Station was put into service in 1976 and is currently 41 years old. It meets the current needs of the Fire Department from a size and location point of view; however, it does not meet the current building and fire codes nor does it comply with NFPA standards for firefighter health and safety. A renovation and addition will provide the Department with a facility that meets all current building, life safety, and occupational health codes. The facility lacks adequate storage which reduces the functionality and use of the apparatus bays. A facility that provides adequate training, living, community accessibility, and equipment and storage space supports our firefighting personnel and assists the Department in the delivery of excellent services to our community. A renovation of the station utilizes existing Town owned property and will provide for ADA compliance, a public restroom, male and female firefighter showers and accommodations. It will be designed to meet current NFPA Standards for firefighter health and safety and will provide modern life safety features.

Impact if not completed: The Fire Department will continue to operate in a building that does not meet safety and building codes. The Town will have to invest in a new roof and heating system in the next several years. The firefighters will continue to operate in the limited space the station provides.

Timeframe: FY 2022

Replace. Freq:
50 Years

Stakeholders: Town Residents / Firefighters / Hotels / State Hospital Complex / Condominiums & Apartment Complexes

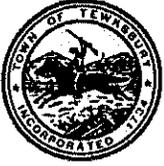
Operating Budget Impact: Reduced maintenance costs, improved flexibility in Departmental function between stations.

Funding Source:

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$150,000.00	\$0.00	\$150,000.00
Construction	\$0.00	\$0.00	\$0.00	\$1,100,000.00	\$0.00	\$1,100,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$0.00	\$0.00	\$1,250,000.00	\$0.00	\$1,250,000.00

Basis of Cost Projection: Estimate only. No feasibility study funded or conducted to date.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: South Fire Station Bathroom Renovation

Date: December 1, 2017

Project ID Number:

Revision Date:

Submitted By: Michael Hazel, Fire Chief

Department: Fire

First Year Submission: 2017

Priority: Medium

Description of Project: A renovation of the living quarters men’s and women’s rooms are needed the South Fire Station. Replacement of the toilets, urinals, sinks, fixtures, toilet partitions, related plumbing and new flooring will be covered under this request. The area and physical structure of the building will not change.

Justification/Benefit: The South Fire Station was put into service in 2001 and is currently 16 years old. It meets the current needs of the Fire Department from a size and location point of view and is overall good condition. The facility is staffed 24hours with an anticipated increase in staffing in the future if the Town supports the addition of a second full time ambulance. At the time of construction, several cost saving measures were taken to stay within the allotted budget for the project. One of those cost saving measures was in the bathrooms. While the community room bathrooms remain in good shape, the firefighter living quarters restrooms are in need of updating. The plumbing fixtures have been replaced as needed; however, the shallow sinks should be replaced to provide more functionality and the toilets need to be updated as well. The contractor grade flooring will be replaced during the renovations. Although the building’s fire alarm panel may need modification or upgrade within the next few years, this project will not require upgrades of the fire protection provided it stays within the scope of the proposed work.

Impact if not completed: The firefighters will continue to use the restroom and shower facilities that are in place. The Department will continue to make repairs as needed to maximize life of these original building components.

Timeframe: FY 2022

Replace. Freq:
25 Years

Stakeholders: Town Residents / Firefighters / Hotels / State Hospital Complex / Condominiums & Apartment Complexes

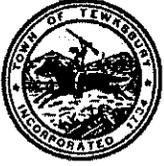
Operating Budget Impact: Reduced maintenance costs, improved functionality.

Funding Source:

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$0.00	\$0.00	\$50,000.00	\$0.00	\$50,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$0.00	\$0.00	\$50,000.00	\$0.00	\$50,000.00

Basis of Cost Projection: Town’s Facility Director evaluated need along with firefighters versed in construction projects.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects/Equipment

Project Name: 2010 Seagrave Fire Engine Refurbishment

Date: December 1, 2017

Project ID Number: _____

Revision Date: _____

Submitted By: Michael Hazel, Fire Chief

Department: Fire

First Year Submission: 2017

Priority: Medium

Description of Project: The 2010 Seagrave Marauder II Fire Engine is at its half-life of front line service to the community. The truck is in very good condition and will remain in front-line service for another seven years. The truck is showing signs of corrosion and is stocked to near its National Fire Protection Association (NFPA 1911) live load weight calculation. Competitive bid specifications for its refurbishment will be drafted to comply with the current edition of NFPA 1901, Standard for Automotive Fire Apparatus. Inspections will be required to verify working components of the body and cab, electrical systems, fire pump, frame and chassis before any components are removed to ensure the refurbishment option is cost effective vs. replacement of the apparatus.

Justification/Benefit: The apparatus has a stainless steel body and is of heavy duty construction. The apparatus manufacturer continues to be leader in the fire service industry and parts remain readily available. The community will receive the full anticipated useful life out of this apparatus; fifteen years of front line use and five years of reserve/backup use. The engine will be rejuvenated for continued safe use by our firefighters.

Impact if not completed: The Fire Department will continue to maintain and operate the Seagrave engine. Repair costs will likely escalate if core equipment is not verified service worthy and repaired or replaced as needed. The vehicle may not reach its full service life. We will continue to maintain and stock the truck with the tools and equipment it is capable of carrying. Current corrosion and live load weight load will continue to be monitored and will be addressed as needed for continued safe operation.

Timeframe: FY 2023

Replace. Freq:
20 Years

Stakeholders: Town Residents / Firefighters / Hotels / State Hospital Complex / Condominiums & Apartment Complexes.

Operating Budget Impact: Reduced maintenance costs, improved reliability of emergency response vehicle.

Funding Source: Available Town Funds

Capital Funding Request

Fiscal Year	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$75,000.00	\$75,000.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$0.00	\$0.00	\$0.00	\$0.00	\$75,000.00	\$75,000.00

Basis of Cost Projection: Estimate based on current industry costs for refurbishment and the condition of this piece of apparatus.

DPW General Fund



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Drain/Stormwater System Management

Date: 01/03/2018

Project ID Number: _____

Revision Date: _____

Submitted By: Brian Gilbert, Supt. DPW Department: Public Works Dept. Priority: _____

First Year Submission: Phone #: 978-640-4440 Email: bgilbert@tewksbury-ma.gov

Description of Project:

This program is an annual request to improve the Town's drainage system by repairing failed drainage structures and culverts, and the installation of new drainage facilities where existing drainage problems endanger public safety and/or private property. Staff plan, coordinate and perform drainage improvements in conjunction with the Transportation Improvement Program to minimize disruptions and inconveniences and to reduce overall program expenditures. Additional drain repairs for incidental/minor upkeep have been included in the Town's operational budget.

The capital construction projects identified for this program in Fiscal Year (FY) 2019 are for adjusting, replacing and repairing catch basin and manholes, repairing Bridge Street culvert/bridge and the upper culvert headwall on Pinnacle St; drain installation on Veranda Ave and Forest St; and design of the lower Pinnacle St culvert.

Justification/Benefit:

Improving failed drainage infrastructure throughout Town eliminates a potential public health and safety hazard while efficiently and effectively managing the stormwater runoff for these areas in Town. In addition, the cost to maintain and repair infrastructure elements is substantially less compared to a complete rebuilding of a failed structure. These improvements help to maintain compliance with EPA's MS4 NPDES Phase 2 Stormwater permit to the maximum extent possible with the budget available.

Impact if not completed:

Potential fines and penalties from the EPA for failing to comply with the MS4 NPDES Phase 2 Stormwater permit, loss in function of the drain systems with increase difficulty to minimize and/or eliminate flooding and damage to public and private property, danger to public travel, increased mosquito breeding causing nuisance as well as health hazards, increased exposure for infiltration into sewer collection systems, deterioration of the roadway surface accelerated by the effect of poorly drained roadways and, in some cases, culverts that are in poor condition have a high rate for failure which would cause the roadway to collapse and result in full road closure, delayed travel times and unsafe conditions for all vehicle travel.

Timeframe:

Replacement Freq.: 25 Years

Projects are included on the attached spreadsheet inclusive of Fiscal Year's 2019-2023.

Stakeholders:

The Town, as a MS4 official for the NPDES Phase 2 Stormwater permit, and residents that live near the water bodies prone to stormwater flooding; taxpayers, the motoring public, and Highway/Forestry Division

Operating Budget Impact:

Engineering Division and Highway/Forestry Division personnel time will be required to support the projects to be completed. Repairs will eliminate the cost for expensive emergency repairs, formation of potholes, scouring of the roadway edge, all of which result in the loss of production efficiency and increased supply costs.

Cost Analysis:

Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
						Total
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$50,000.00	\$20,000.00	\$35,000.00	\$35,000.00	\$35,000.00	\$175,000.00
Construction	\$390,000.00	\$940,000.00	\$220,000.00	\$230,000.00	\$230,000.00	\$2,010,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$440,000.00	\$960,000.00	\$255,000.00	\$265,000.00	\$265,000.00	\$2,185,000.00

Basis of Cost Projection:

Cost project based on current bid pricing; Does not include cost for MS4 Stormwater permit projects

Drain-Stormwater
5-Year Project Cost Estimates

Drainage/Stormwater

Budget Cost Elements	FY19	FY20	FY21	FY22	FY23	TOTAL
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Eng.	\$50,000.00	\$20,000.00	\$35,000.00	\$35,000.00	\$35,000.00	\$175,000.00
Construction	\$440,000.00	\$1,240,000.00	\$520,000.00	\$530,000.00	\$480,000.00	\$3,210,000.00
Contingency						
TOTAL	\$490,000.00	\$1,260,000.00	\$555,000.00	\$565,000.00	\$515,000.00	\$3,385,000.00

Fiscal Year

Project Category

FY19

Location

Cal 2018-2019

Schedule

Cost

Fund

Project Category	Location	Schedule	Cost	Fund
Drains				
CB/Manhole adjustment and repair	Backlog Inventory	Annual	Drain and Struct's	Chapter90
Install Infiltration system	Veranda Ave			Chapter90
Headwall Replacement	Upper Pinnacle St	\$65K programmed as Part of 2017 Chapter90		Chapter90
Culvert Rehabilitation	Bridge St			Chapter90
Drain Installation	Forest St			Chapter90
				\$390,000.00

Stormwater Compliance

Stormwater Mapping	DEP required system mapping	Funded on-going	Engineering Services	\$0.00
Detention Basin Rehabilitation	Throughout Town			\$0.00
Requirements of MS4 Permit	Requirements Assessment			\$50,000.00
				\$50,000.00

Improvement Projects

	\$0.00
	\$0.00

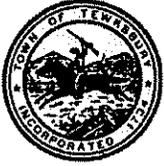
Project Development

Culvert Replacement	Pinnacle St (Lower) Design			Chapter90
				\$50,000.00

Total Cost FY19 \$490,000.00

Fiscal Year	Project Category	Location	Schedule	Cost	Fund
FY20		Cal 2019-2020			
	Drains				
	CB/Manhole adjustment and repair	Backlog Inventory	Annual	\$30,000.00	Chapter90
	Culvert Replacement	Bayberry Lane		\$75,000.00	Chapter90
	Culvert Replacement	Bayberry Lane		\$500,000.00	Small Bridge Program
	CB Install	Old Boston Rd connection to Main St		\$35,000.00	MADOT
	Culvert Replacement	Lower Pinnacle St		\$300,000.00	Chapter90
				\$940,000.00	
	Stormwater Compliance				
	Detention Basin Rehabilitation	MS4 Permit requirement	on-going	\$200,000.00	General Fund
	Requirements of MS4 Permit	To Be Determined		\$100,000.00	General Fund
				\$300,000.00	
	Improvement Projects				
				\$0.00	
	Project Development				
	Cayuga St Drain design	Cayuga St		\$20,000.00	Chapter90
			Engineering Services	\$20,000.00	
			Total Cost FY20	\$1,260,000.00	
FY21		Cal 2020-2021			
	Drains				
	CB/Manhole adjustment and repair	Backlog Inventory	Annual	\$20,000.00	Chapter90
	Pipe and structure repair	Cayuga St		\$200,000.00	Chapter90
				\$220,000.00	
	Stormwater Compliance				
	Detention Basin Rehabilitation	MS4 Permit requirement	on-going	\$200,000.00	General Fund
	Requirements of MS4 Permit	To Be Determined		\$100,000.00	General Fund
				\$300,000.00	
	Improvement Projects				
				\$0.00	
				\$0.00	
	Project Development				
	Engineer Roadway and drain	Andover St at Hood Rd Culvert repair		\$35,000.00	Chapter90
			Engineering Services	\$35,000.00	
			Total Cost FY21	\$555,000.00	

Fiscal Year	Project Category	Location	Schedule	Cost	Fund
FY22	Drains	Cal 2021 - 2022			
	CB/Manhole adjustment and repair	Backlog Inventory	Annual		Chapter90
	Headwall and Culvert Repair	Andover St @ Hood Rd		\$30,000.00	Chapter90
				\$200,000.00	
				\$230,000.00	
	Stormwater Compliance				
	Detention Basin Rehabilitation	MS4 Permit requirement	on-going	\$200,000.00	General Fund
	Requirements of MS4 Permit	To Be Determined		\$100,000.00	General Fund
				\$300,000.00	
	Improvement Projects			\$0.00	
				\$0.00	
	Project Development				
	Drain Improvement Design	Woburn St and Felker ST neighborhood		\$35,000.00	
				\$35,000.00	
				\$565,000.00	
				Total Cost FY22	
FY23	Drains	Cal 2022 - 2023			
	CB/Manhole adjustment and repair	Backlog Inventory	Annual		Chapter90
	Install/Rebuild drain system	Woburn St x Felker St neighborhood		\$30,000.00	Chapter90
				\$200,000.00	
				\$230,000.00	
	Stormwater Compliance				
	Detention Basin Rehabilitation	MS4 Permit requirement	on-going	\$200,000.00	
	Requirements of MS4 Permit	To Be Determined		\$50,000.00	
				\$250,000.00	
	Improvement Projects			\$0.00	
				\$0.00	
	Project Development				
	Drain Improvement Design	Location based on Stormwater Assessment		\$35,000.00	
				\$35,000.00	
				\$515,000.00	
				Total Cost FY23	



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Transportation: Pavement Management Date: 01/03/2018

Project ID Number: _____ Revision Date: _____

Submitted By: Brian Gilbert, Supt. DPW Department: Public Works Dept. Priority: _____

First Year Submission: Phone #: 978-640-4440 Email: bgilbert@tewksbury-ma.gov

Description of Project:

This request proposes the funding of an annual Transportation/street Improvement Program including: preventative maintenance, resurfacing and reconstruction, and sidewalks. As part of this program the Town has established a Complete Streets Policy, which has been evaluated and approved by the MA Department of Transportation. Acceptance of the policy by MADOT enables the Town to be eligible for additional State aid under its Complete Streets program. Currently the Town is establishing a prioritization plan outlining the roadway improvements projects that will provide safe and accessible options for all modes of travel including walking, biking, transit, and vehicles. Complete Streets project funding has been included in this request, as funding allows.

In FY19 the Town proposes the following roadway treatments: crack-seal of approximately 2.5 miles of roadway and resurfacing of various roads based on priorities from the recently completed pavement management inventory. Resurfacing projects will include expenses for permitting, catch basin/manhole repair, drain flushing and repair, installation of new drains and shoulder/driveway berm installation. Funding for sidewalk installations is also included in this request. Locations and specifications are currently being established as part of a sidewalk plan, funded in FY18. In FY19 Carter Street and Cart Path Road will be reconstructed following the replacement of the water main and Andover Street from North to the Lowell City line will be resurfaced utilizing a combination of Chapter 90 and previously appropriated funds (STM18, Art 3); South Street from Main Street to Brown Street will be reconstructed with Chapter 90 funding; and Shawsheen St from Mark Road to Main Street will be reconstructed under a Hazard Mitigation Grant from FEMA.

Justification/Benefit:

The lack of additional Town funding for a regular street improvement program over many years has resulted in the deterioration of Tewksbury's roads. In the calendar years 2004-2010, the sewer installation project injected approximately \$10,560,000 to improve many of the Town roads. However, there remained numerous miles of roads in disrepair and those in need of preventative maintenance. At this time roads treated during the sewer project are showing signs of distress. The large number of roads currently in need of preventative maintenance will begin to degrade into poor condition if regular investment and preventative maintenance practices are withheld. Roads more recently treated should be maintained through crack-sealing techniques to gain the greatest return on investment while avoiding higher costs for repair. Continued funding through State programs and Town accounts will increase the quality and safety of Tewksbury's roads as well as provide accommodations for various modes of transportation. Preventative measures will prolong road life-cycles while elevating the quality of roads without having to rehabilitate at higher unit costs.

Impact if not completed:

The life cycle of roads will be reduced, road surface quality will diminish, operating and resurfacing costs increase, safety is diminished, while damage to private property escalates.

Timeframe:

Projects are included on the attached spreadsheet FY19-FY23.

Replacement Freq.: 5-25 Years

Stakeholders:

Taxpayers, the motoring public, residents near the area that utilize these roads the most, and Highway/Forestry Division

Operating Budget Impact:

Engineering Division, Highway/Forestry Division and Water & Sewer Division personnel time will be required to support the projects to be completed.

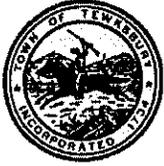
Cost Analysis:

Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$1,500,000.00	\$680,000.00	\$1,445,000.00	\$1,445,000.00	\$1,045,000.00	\$6,115,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$1,500,000.00	\$680,000.00	\$1,445,000.00	\$1,445,000.00	\$1,045,000.00	\$6,115,000.00

Basis of Cost Projection: Cost project based on current bid pricing.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Transportation: Traffic Improvements

Date: 01/03/2018

Project ID Number: _____

Revision Date: _____

Submitted By: Brian Gilbert, Supt. of Public Works Department: Public Works Priority: _____

First Year Submission: _____ Phone #: 978-640-4440 Email: bgilbert@tewksbury-ma.gov

Description of Project:

Projects under this category are one-time projects intended to improve aspects of design and/or function of roadway infrastructure or enhancements that will improve traffic safety and preservation of public and private property. The projects scheduled for FY19 include the continued replacement and installation of roadway signage to meet current Federal Highway standards found in the Manual for Uniform Traffic Control Devices (MUTCD); and the upgrade of traffic light fixtures and controls at a number of intersections based on an inventory conducted by BETA Engineers.

Justification/Benefit:

Adequately maintained retro-reflective signs and pavement markings improve highway safety and prevent roadway departure crashes by reflecting light from vehicle headlights, making the signs and markings more visible especially at night and during inclement weather. During FY15 an inventory of all road signs was completed. The inventory outlined all non-compliant signs and identified locations where signage should be installed. A total of 1,855 signs not meeting current standards need to be replaced or installed. Further, because retro-reflective properties of traffic control devices deteriorate over time, the Town must actively manage the maintenance of signs and pavement markings in order to ensure that they are clearly visible.

Intersection traffic controls, including blinking lights, controlled stop and school zone lights are antiquated and lack accommodation for pedestrians. These facilities need a schedule for repair and replacement. As part of the FY18 appropriation the Town has contracted an assessment of components and fixtures needing replacement. The information will be used to develop a schedule for design (if needed) and replacement. Also any repairs to mast arms will be also be addressed.

Impact if not completed:

Efficiently managing sign replacement and provide an inventory of signs that meet visibility standards will be more cumbersome and could prove ineffective if approached on an incremental basis. Since approximately 50% of all accidents happen during night-time conditions when only 25% of driving occurs, efforts to enhance safety should be implemented with the goal of accident avoidance. If sign installation and maintenance is managed ineffectively a higher rate of accidents may occur.

In addition, the Town must demonstrate that it is actively engaged in managing sign retro-reflectivity. The State has required Towns to develop an inventory of signs and plan for their replacement. If the Town is unable to demonstrate compliance, future funding through Chapter 90 could be withheld.

Timeframe:

Replacement Freq.: 25 - 50 Years

The sign inventory was conducted in the Fiscal Year 2015; sign replacement will be scheduled during the construction seasons of 2018-2021.

Stakeholders:

The immediate stakeholders include the staff at DPW responsible for sign replacement and installation. As the plan is developed/implemented and a tracking mechanism initiated the motoring public will become more aware of sign visibility during evening hours. Drivers with poor night-time vision and/or all drivers during weather conditions that create poor visibility at night will benefit from sign installations.

Operating Budget Impact:

An increase in sign cost will result due to the sign material costs. However, sign replacement and maintenance is the on-going responsibility of the Department with a continually increasing annual budget of \$24,000. The continued increase of the annual operating budget will result if not funded.

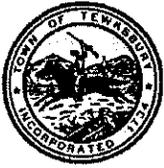
Cost Analysis:

Funding Source: ● Levy ○ CPA ○ Revolving ● State Aid ○ Water ○ Sewer ○ Recreation ○ Private ○ Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$135,000.00	\$235,000.00	\$200,000.00	\$0.00	\$0.00	\$570,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$135,000.00	\$235,000.00	\$200,000.00	\$0.00	\$0.00	\$570,000.00

Basis of Cost Projection: Engineer's estimate



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Transportation: Project Development and Design Date: 01/03/2018
 Project ID Number: _____ Revision Date: _____
 Submitted By: Brian Gilbert, Supt DPW Department: Public Works Dept Priority: _____
 First Year Submission: Phone #: 978-640-4440 Email: bgilbert@teewksbury-ma.gov

Description of Project:

This project will contract Engineering Services to evaluate existing conditions and design consideration in a Safety Audit of the Shawsheen Street and Foster Road intersection. Design plans and specifications for reconstruction and improvement related to roadway facilities will be scheduled for FY2020. In most instances project construction will be scheduled for the following fiscal year (FY2021). In addition, funding will be used to develop plans for Complete Street project(s). Plans for Complete Street projects must be developed by the Town; construction funding is awarded through MADOT's grant program.

Justification/Benefit:

The Town must provide engineering design specifications for certain construction projects to ensure engineering and construction standards are met. In addition, various metrics are applied to ensure a plan will work as designed given site criteria. The intersection of Shawsheen Street and Foster Road, presents a number of challenges due to its horizontal and vertical layout, which is further complicated by the inclusion of Pattern Road and corner store egress in the design. The intersection is a heavily travel section of road in close proximity to the Health Brook School. The goal of the design will be to improve safety at this intersection. The first phase in the design process is to assess existing conditions and look at a number of variables as they relate to safety, accident history, movements through the intersection and traffic counts, etc. This information will be used in the design layout to formulate a design that meets current standards and provides safe passage through the intersection. The project will look to modify the layout and reconstruct the roadway providing accommodations for pedestrians and cyclists.

Currently a prioritization list of (15) projects that meet the funding criteria of the Complete Street program is being assembled. Once the list has been composed and reviewed by MADOT, the Town will apply for Complete Street construction funding and begin design on the Town's top priority.

Impact if not completed:

The Shawsheen x Foster intersection will continue to experience unsafe, undefined turning movements and blind sight-lines. Pedestrian safety will continue to be compromised due to the expansiveness of the intersection and lack of traffic controls and calming techniques. Whereas, the school is in proximity to the intersection, such improvement(s) will provide greater safety for walkers, cyclists and egress from the local convenience corner store.

The specific Complete Street project(s) have not yet been chosen. However, the goal of the program is to promote safe accessible multi-modal transportation options, including walking, biking, transit and vehicular, for all ages and abilities.

Timeframe:**Replacement Freq.:** 25 Years

Generally, project development will be completed in the year preceding project construction. However, due to the number of intersections Engineering Division staff is working on, which are in various phases of design, plans and specifications of the Shawsheen/Foster intersection have been budgeted in FY2020. This initial phase of the design process will be completed during the 2019 fiscal year. Application for construction funding shall be through the State Transportation Improvement Program. Complete Street project design will be completed in FY2019, with construction starting once grant funds are available.

Stakeholders:

All traveling public and adjacent residents along the corridors

Operating Budget Impact:

Realignment and signalization of the intersections will require electric power.

Cost Analysis:

Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$58,000.00	\$200,000.00	\$50,000.00	\$0.00	\$50,000.00	\$358,000.00
Construction	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$58,000.00	\$200,000.00	\$50,000.00	\$0.00	\$50,000.00	\$358,000.00

Basis of Cost Projection: Engineering proposals

Transportation
5-Year Project Cost Estimates

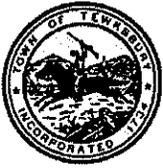
Budget Cost Elements	FY19	FY20	FY21	FY22	FY23	TOTAL
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Eng.	\$58,000.00	\$200,000.00	\$50,000.00	\$0.00	\$50,000.00	\$358,000.00
Construction	\$1,635,000.00	\$915,000.00	\$1,645,000.00	\$1,445,000.00	\$1,045,000.00	\$6,685,000.00
Contingency						
TOTAL	\$1,693,000.00	\$1,115,000.00	\$1,695,000.00	\$1,445,000.00	\$1,095,000.00	\$7,043,000.00

Fiscal Year	Project Category	Location	Schedule	Treatment	Cost	Fund
FY19	Road Preventative Maintenance	Gal 2018-2019				
	Cracksealing	Various locations based on PCI Report	Annual	Cracksealing	\$50,000.00	Chapter90
					\$50,000.00	
	Reconstruction/Resurfacing					
	Grind and Overlay	Andover St (North St to Lowell line)			\$50,000.00	Chapter90
	Full Depth Reconstruction	South St (Main to Brown)			\$200,000.00	Chapter90
		Hazard Mitigation cost-share and non-participating			\$550,000.00	Chapter90
					\$800,000.00	
	Sidewalks/Complete Streets					
	Complete Streets Construction	Locations TBD based on Prioritization Plan		Dependent on MADOT grant award	\$400,000.00	Complete Streets Grant
	Sidewalk Construction	Locations TBD based on Prioritization Plan			\$250,000.00	General Fund
					\$650,000.00	
	Improvement Projects					
	Traffic Light Signal Improvements	Based on FY17/18 assessment and Design			\$100,000.00	Chapter90
	Traffic Sign Install and upgrade	Town-wide Sign Inventory (incl Traffic Signals)		2nd year funding Request of multi-year project	\$35,000.00	General Fund
					\$135,000.00	
	Project Development					
	Intersection Safety Audit	Shawsheen at Foster			\$8,000.00	Chapter 90
	Complete Streets Project Design	Based on (5) year prioritization plan			\$50,000.00	Chapter 90
					\$58,000.00	
					\$1,693,000.00	

Total Cost FY19

<u>Fiscal Year</u>	<u>Project Category</u>	<u>Location</u>	<u>Schedule</u>	<u>Treatment</u>	<u>Cost</u>	<u>Fund</u>
FY20	Road Preventative Maintenance	Cal 2019-2020				
	Cracksealing	Various locations based on PCI Report	Annual	Cracksealing	\$30,000.00	Chapter90
	Nova Chip	Grind and Overlay vs. Novachip: Heath St vs North St South		Micro Surface	\$0.00	Chapter90
					\$30,000.00	
	Reconstruction/Resurfacing					
	Grind and Overlay	Various locations based on PCI Report		Reclaim and Pave	\$150,000.00	Chapter90
	Full-Depth Reconstruction	Various locations based on PCI Report			\$250,000.00	Chapter90
					\$400,000.00	
	Sidewalks/Complete Streets					
	Locations TBD based on Prioritization Plan				\$250,000.00	General fund
					\$250,000.00	
	Improvement Projects					
	South/Salem/Main intersect improvem't	MADOT non participating			\$200,000.00	Chapter90
	Traffic Light Signal improvements	Based on FY17/18 assessment and Design			\$0.00	Chapter90
	Traffic Sign Install and upgrade	Town-wide Sign Inventory (incl Traffic Signals)		3rd year funding Request of multi-year project	\$35,000.00	General Fund
					\$235,000.00	
	Project Development					
	Intersection Design	Shawsheen X Foster			\$150,000.00	Chapter90
	Complete Streets Project Design	Based on (5) year prioritization plan			\$50,000.00	Chapter90
					\$200,000.00	
				Total Cost FY20	\$1,115,000.00	
FY21	Road Preventative Maintenance	Cal 2020- 2021				
	Cracksealing	Various locations based on PCI Report	Annual	Cracksealing	\$50,000.00	Chapter90
	Nova Chip	Grind and Overlay vs. Novachip: Heath St vs North St South		Micro Surface	\$300,000.00	Chapter90
					\$350,000.00	
	Reconstruction/Resurfacing					
	Grind and overlay	Various Locations based on PCI Report			\$175,000.00	Chapter90
	Full-Depth/Grind Overlay	Cayuga Rd			\$270,000.00	Chapter90
					\$445,000.00	
	Sidewalks/Complete Streets					
	Complete Streets Construction	Locations TBD based on Prioritization Plan		Dependant on MADOT grant award	\$400,000.00	Complete Streets Grant
	Sidewalk Construction	Locations TBD based on Prioritization Plan			\$250,000.00	General Fund
					\$650,000.00	
	Improvement Projects					
	Andover/River Rd Intersection Improvmt	MADOT non-participating (designed by others)			\$100,000.00	Chapter90
	Traffic Sign/Signal Install and upgrade	Town-wide Sign Inventory (incl Traffic Signals)			\$100,000.00	Chapter 90
					\$200,000.00	
	Project Development					
	Complete Streets Project Design	Based on (5) year prioritization plan			\$50,000.00	Chapter 90
					\$50,000.00	
				Total Cost FY21	\$1,695,000.00	

<u>Fiscal Year</u>	<u>Project Category</u>	<u>Location</u>	<u>Schedule</u>	<u>Treatment</u>	<u>Cost</u>	<u>Fund</u>
FY22	Road Preventative Maintenance	Cal 2021 - 2022				
	Cracksealing	Various locations based on PCI Report	Annual	Cracksealing	\$50,000.00	Chapter90
	Nova Chip			Mirco Surface	\$300,000.00	Chapter90
					\$350,000.00	
	Reconstruction/Resurfacing					
	Full-Depth/Grind Overlay	Various Locations based on PCI Report			\$175,000.00	Chapter90
	Full-Depth/Grind Overlay				\$270,000.00	Chapter90
					\$445,000.00	
	Sidewalks/Complete Streets					
	Locations TBD based on Prioritization Plan				\$250,000.00	General Fund
	Complete Streets Construction	Locations TBD based on Prioritization Plan		Dependant on MADOT grant award	\$400,000.00	Complete Streets Grant
					\$650,000.00	
	Improvement Projects				\$0.00	
					\$0.00	
	Project Development				\$0.00	
					\$0.00	
					\$1,445,000.00	
	Total Cost FY22					
FY23	Road Preventative Maintenance	Cal 2022 - 2023				
	Cracksealing	Various locations based on PCI Report	Annual	Cracksealing	\$50,000.00	Chapter90
	Nova Chip			Mirco Surface	\$300,000.00	Chapter90
					\$350,000.00	
	Reconstruction/Resurfacing					
	Full-Depth/Grind Overlay	Various Locations based on PCI Report			\$175,000.00	Chapter90
	Full-Depth/Grind Overlay				\$270,000.00	Chapter90
					\$445,000.00	
	Sidewalks/Complete Streets					
	Sidewalk Construction	Locations TBD based on Prioritization Plan			\$250,000.00	General Fund
					\$250,000.00	
	Improvement Projects				\$0.00	
					\$0.00	
	Project Development				\$50,000.00	
	Complete Streets Project Design	Based on (5) year prioritization plan			\$50,000.00	
					\$1,095,000.00	
	Total Cost FY23					



Town of Tewksbury FY2019 - FY2021 Capital Improvements Projects

Project Name: Department of Public Works Building Renovation Date: 2/12/2018

Project ID Number: Revision Date:

Submitted By: Brian Gilbert, Supt DPW Department: Public Works Dept Priority:

First Year Submission: Phone #: 978-640-4440 Email: bgilbert@teewksbury-ma.gov

Description of Project:

This project addresses the structural concerns of the DPW facility and its on-going operational needs. The project consists of two major components: construction of a separate fleet garage building, providing additional truck and equipment storage into the vacated garage; and repair and improvements to the current building envelope with minor modifications to improve efficiency in operations. The Project has undergone a facility assessment and the development of a project program. This request includes cost for design and engineering documents for construction; and construction of the modifications and improvements. It does not include a truck and vehicle wash bay.

Justification/Benefit:

Through an annual inspection process, conducted by the Town's insurance provider a number of deficiencies have been identified and resolved. In some instances the resolutions have been temporary in nature, such as repairs to the roof and concrete block walls. In addition, a preliminary inspection of the building was conducted by a representative of CBI Consulting Architects and Engineers (CBI, 2013). Their inspection report outlined numerous building repairs and improvements necessary to preserve the building's function and remaining useful life. The Fleet Division operation and facility was assessed by Weston and Sampson (W&S, 2015) and determined to be unsafe, constrained and undersized. In 2017 Kang Associates (KA) conducted a Facility Study addressing all of the space needs of the building and DPW operation. The study demonstrated that the two existing vehicle garages do not accommodate storage of the DPW fleet and highlighted inefficiencies in workflow. Most recently an assessment of a modified building program was evaluated to include the highest priorities of the KA Facility Study (Building envelope and space needs) This latest assessment was completed by CBI (2018).

The DPW facility is (50) years old. An addition was constructed (35) years ago to address the growing needs of the Department for space and storage. However, the facility does not meet the current space needs and functioning of the Department today, resulting in concerns for employee safety and health, care and damage to vehicles and equipment, work efficiencies, storage of tools and supplies and security of the facility.

Impact if not completed:

The building doesn't serve the space, safety and efficiency needs of the DPW's operations, while the physical structure will continue to be susceptible to deterioration, water infiltration and the funding of sunken costs. Safety of the staff will continue to be an issue as space is limited and environmental systems need updating. Higher building costs due to the lack of current building system technologies will continue wasteful spending on energy and repairs. Inefficient work processes and procedures will continue, which limit the work schedules of an under-sized staff resource.

Timeframe:

Replace. Freq: 30 Years

Funding for the facility's assessment has been conducted by Kang Architects and CBI Consulting; the assessments provide a program and budget for design and construction services including contingencies. Engineering and Design for the modification repair and new construction is scheduled for FY19 and could begin as early as fall 2018. Construction could begin spring 2020.

Stakeholders:

Town staff working in the building and visitors doing business; Police, Fire and Park Department

Operating Budget Impact:

Potential cost savings in possible energy reduction; reduced incidence of equipment damage and repair; operational building repair, costs associated with employee injury.

Cost Analysis:

Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$750,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$750,000.00
Construction	\$5,500,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$5,500,000.00
Equipment	\$220,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$220,000.00
Contingency	\$572,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$572,000.00
Totals	\$7,042,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$7,042,000.00

Basis of Cost Projection: Consultant's Feasibility Cost Estimate(s)



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Equipment Replacement Program Date: 1/2/2018
 Project ID Number: _____ Revision Date: _____
 Submitted By: Brian Gilbert, Supt DPW Department: Public Works Dept Priority: 1
 First Year Submission: Phone #: _____ Email: _____

Description of Project:

The Department of Public Works has an inventory of (97) pieces of DPW/Utility equipment, not inclusive of all smaller motorized equipment and attachments. The current replacement value of all rolling stock and specialized equipment is approximately \$4,700,000. Each piece of equipment is inventoried with the current replacement value, condition and replacement time interval. Replacement intervals vary from 5-25 years and are based on recommendations by the American Public Works Association member organizations. The selection process of vehicles to be replaced begins with the proposed replacement date. Then each vehicle is assessed as to its Remaining Useful Life, mechanical condition and work requirements. Lastly, each piece of equipment is prioritized for replacement and/or modification.

In FY19 the DPW requests General Fund replacements of the following: Forestry Trk#9- Ford 250 with a 550 Series Forestry dump and snow package; Highway Trk#54 and Trk#52 replace both with 10-wheel dump trucks equipped with snow plow package and drop-in style sanders; Asphalt spreader box and trailer (shared expense w/Water); Bombardier sidewalk snow plow and blower; and three liquid deicing saddle tank assemblies. The Water and Sewer Divisions request the following replacements: Trk#8 – Ford 350 pickup w/F-450 Utility-body w/snow package; Shared cost for the Asphalt spreader and trailer; and 1995 763 Bobcat

Justification/Benefit:

The DPW's systematic replacement program defines what equipment is expected to be replaced during the next five years, with the intent of preventing any unexpected emergency purchases, lockout-tagout conditions due to safety concerns or loss of service. Annual updates are conducted by the Road Machinery Division and reviewed by the Department's Superintendent. The equipment scheduled for replacement in FY19 are described on accompanied attachments.

Impact if not completed:

The lack of an on-going replacement program and schedule will result in a jumbled inventory and the haphazard replacement of machinery. This could lead to a fleet ineffective in meeting the needs of the work program; budgetary problems if a piece of machinery had to be replaced in an emergency; and personnel safety issues if the machinery was operated beyond its reasonable life. Repair costs will rise due to the extent and scope of repairs for older equipment. Staff time to repair other Stakeholder Department's vehicles will see delays and increased costs for out-sourcing. Tasks/programs may go unaddressed such as Street-sweeping, drain repair, sidewalk plowing etc. due to unavailability of equipment

Timeframe:

This is an on-going capital request

Replace. Freq:

5-25 Years

Stakeholders:

DPW operations staff and mechanics; Police, Fire, Park and Recreation Departments; Residents, businesses and Town government agencies dependent on DPW for snow removal, while some of the same Departments rely on DPW mechanics for repairs.

Operating Budget Impact:

Replacement of older vehicles will reduce repair costs within the operating budget. In addition, costs due to downtime, i.e. during snow plowing events will result in a reduction in overall storm event cost. Departments that depend on DPW mechanics to repair their vehicles will see delays in equipment being serviced and increased costs due to the postponement of those repairs. Outsourcing repair of all vehicles will increase costs across departments.

Cost Analysis:

Funding Source: ● Levy ○ CPA ○ Revolving ○ State Aid ● Water ● Sewer ○ Recreation ○ Private ○ Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Equipment	\$1,007,000.00	\$660,000.00	\$570,000.00	\$585,000.00	\$590,000.00	\$3,412,000.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$1,007,000.00	\$660,000.00	\$570,000.00	\$585,000.00	\$590,000.00	\$3,412,000.00

Fleet/Equipment
5-year Project Cost Estimates

Budget Cost Elements	2019	2020	2021	2022	2023	TOTAL
Site Acquisition						
Design/Eng.						
Construction						
Equipment	\$1,007,000.00	\$660,000.00	\$570,000.00	\$585,000.00	\$590,000.00	\$3,412,000.00

Fiscal Year

Veh #	Year	Description Of Purchase	Department	GenFund	Cost Enterprise	Comments
FY2019						
	New	Bombardier Sidewalk tractor w/blower	Highway	\$160,000.00		include w/V-blade
	New	Asphalt Spreader Box	Highway	\$20,000.00		Shared cost w/Water
	New	Asphalt Spreader-box Trailer	Highway	\$6,000.00		Shared cost w/Water
54	1990	10-Wheel Dump w/Plow package and sander	Highway	\$250,000.00		Replaces 1990 5-Ton Permanent Mount Sander
52	1994	10-Wheel Dump w/Plow package and sander	Highway	\$250,000.00		Replaces 1994, 5-Ton Dump w/snow package
9	New	F-550 forestry body and snow package	Forestry	\$105,000.00		Replaces 2000, 3/4 Ton Pickup Diesel w/plow
	2006	(3) Liquid deicing saddle tank Assemblies	Snow/ice	\$15,000.00		Replace (2) w/new trucks (1) existing
		Sub-total DPW		\$806,000.00		
8	New	F-450 Diesel Utility Body w/snow package	Water/Sewer		\$95,000.00	Replace 2011, 3/4 Ton Pickup with plow
	New	Asphalt Spreader Box	Water		\$20,000.00	
	New	spreader-box Trailer	Water		\$6,000.00	
802	1995	763 Bobcat	Water/Sewer		\$80,000.00	Hi-flow
		Sub-total Utility			\$201,000.00	
		Total FY19		\$1,007,000.00		
FY2020						
56	1997	5-Ton Dump w/snow package	Highway	\$200,000.00		Replace Perm Sander w/Dump
	1998	6-Yard sander (slide-in)	Snow	\$25,000.00		Replace Torwell w/Slide-in sander for #56
	2000	6-Yard sander (slide-in)	Snow	\$25,000.00		Replace Torwell w/Slide-in sander for #59
	New	Rubber tire Excavator	Highway	\$160,000.00		with mower attachment
60	2006	F-550 Dump w/snow package	Highway	\$100,000.00		Replace w/Same
		Sub-total DPW		\$510,000.00		
87	2007	F-550 Dump w/snow Package	Water/Sewer		\$100,000.00	Replace w/Same
82	2011	Ford Ranger 2-wheel drive	Water/Sewer		\$50,000.00	Replace w/Ford Cargo Van
		Sub-total Utility			\$150,000.00	
		Total FY20		\$660,000.00		

FY2021

55	1999	5-Ton Dump w/snow package	Highway	\$200,000.00	Replace w/Same
	2000	6-Yard sander (slide-in)	Snow	\$25,000.00	Replace Torwell w/Slide-in sander for #55
901	1996	Brush Bandit Chipper	Forestry	\$55,000.00	Replace w/Same
68	2000	Loader		\$150,000.00	Replace w/Same
		Sub-total DPW		\$430,000.00	
8	2011	F-350 Diesel w/Plow package	Water/Sewer	\$85,000.00	Replace w/Same
10	2004	Ford Explorer	WTP	\$55,000.00	Replace w/Same
		Sub-total		\$140,000.00	
		Total FY21		\$570,000.00	

FY2022

58	1994	5-Ton Dump w/snow package	Highway	\$200,000.00	Replace with same
	1996	6-Yard sander (slide-in)	Snow	\$25,000.00	Replace HI-Way slide-in sander
61	2006	F-550 Rack w/lift gate/snow pkg	Highway/Snow	\$90,000.00	
6	2006	F-350 Pickup w/snow package		\$60,000.00	
		Sub-total DPW		\$375,000.00	
50	2000	5-ton Dump w/snow package	Water/Sewer	\$210,000.00	
		Sub-total		\$210,000.00	
		Total FY22		\$585,000.00	

FY2023

95	2005	Aerial Lift Bucket Forestry Package	Forestry	\$200,000.00	Replace with Same
22	2008	3/4 Ton Diesel PU	Highway	\$90,000.00	Replace with Same
53	2005	5-Ton Dump w/snow package	Highway	\$220,000.00	Replace w/Dump body and slide-in sander
	New	6-Yard sander (slide-in)	Snow	\$25,000.00	Slide-in Sander Truck #53
		Sub-total		\$535,000.00	
15	2011	Crown Victoria w/4-wheel service vehicle	WTP	\$55,000.00	
		Sub-total		\$55,000.00	
		Total FY23		\$590,000.00	

DPW Sewer Enterprise



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Sewer Pump Station Improvements

Date: 01/03/2018

Project ID Number: _____ Revision Date: _____

Submitted By: Brian Gilbert, Supt. DPW Department: Public Works Dept. Priority: _____

First Year Submission: Phone #: 978-640-4440 Email: bgilbert@teewksbury-ma.gov

Description of Project:

This request is comprised of two projects: the design for the installation of an in-line mechanical grinder to breakdown solid materials in the waste stream before entering the pump station wet-well at Heather Row PS and funding non-participating elements of a Hazard Mitigation project funded through the Federal Emergency Management Agency.

The grinder installation project aims to reduce pump station malfunction due to material clogging the pumps and the necessity for emergency response operations to free clogged pumps. The Hazard Mitigation project will install generators at (12) pump stations; this request will make additional improvements during construction, not associated with the generator installation.

Justification/Benefit:

The town-wide sewer collection system utilizes forty six (46) sewer pump stations. Of these, the larger stations in the system have been equipped with grinders. However a number of smaller stations have continued problems with pump obstructions. The Heather Row PS experiences a high number of pump malfunction alarms which disable the pumps. The installation of the grinder will reduce emergency response, extend the life of the station pump(s) and reduce the risk of sewer overflows.

Impact if not completed:

Alarms at this station will continue to require the need for emergency response, many of which occurs after regular hours. Pump failures will reduce the expected life cycle of the pumps, which then would need to be replaced. Pump Station back-ups could occur if emergency response lags or during periods of high flow pumps are disabled.

Site improvements have been identified during the design phase of the generator installation. The majority of these improvements address access issues. Improving access will better ensure worker safety and ability to more efficiently work on station components.

Replacement Freq.: 25 Years

Timeframe:

Installation shall be completed during the FY19 budget year

Stakeholders:

All sewer customers connected to the Heather Row Pump Station, DPW Water & Sewer Division, MA Department of Environmental Protection.

Operating Budget Impact:

Water & Sewer Division overtime should be reduced, cost for electrical power to operate the grinder.

Cost Analysis:

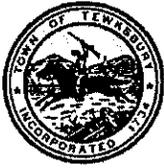
Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$30,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30,000.00
Construction	\$175,000.00	\$125,000.00	\$150,000.00	\$50,000.00	\$0.00	\$500,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$205,000.00	\$125,000.00	\$150,000.00	\$50,000.00	\$0.00	\$530,000.00

Basis of Cost Projection:

Engineer's estimate.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Sewer Inflow and Infiltration Date: 01/02/2018

Project ID Number: _____ Revision Date: _____

Submitted By: Brian Gilbert, Supt. DPW Department: Public Works Dept. Priority: _____

First Year Submission: Phone #: 978-640-4440 Email: bgilbert@tewksbury-ma.gov

Description of Project:

This project is an on-going annual request for the rehabilitation of sewer manholes, pipe segments, and service connections that have been found to be sources of Inflow and Infiltration (I/I). Investigative tasks and projects are required by the DEP, who has recently mandated the submittal of a five-year I/I reduction plan for all cities and towns permitted for discharge from a treatment facility. Initial investigations were conducted in 2012 and repairs made as late as 2017. Continued investigation of (14) primary sub-basins is required to specifically identify locations of structural failures, and target repairs. The Town is currently working with Woodard and Curran to draft the 5-year plan.

Operating funds will be used for on-going investigations in preparation of subsequent capital funding requests for infrastructure repairs. These repairs are scheduled for the FY2019-2023 period; it is anticipated that older system pipe will have been identified for replacement/repair and more extensive repairs to manholes will be undertaken.

Justification/Benefit:

Infiltration and Inflow (I/I) is extraneous water entering the wastewater collection system. Infiltration refers to groundwater that enters the collection system through physical defects such as cracks in the pipes and manholes, or deteriorated joints. Inflow refers to extraneous flow entering the system through point sources, such as roof drains and sump pumps. The extraneous flow produced from I/I sources restricts the potential for new growth by reducing the available capacity in the system, and increases the cost of wastewater treatment operations. More importantly, the reduction in pipe capacity has the potential to cause Sanitary Sewer Overflows (SSOs) during periods of the year with high groundwater recharge and rain events. By removing I/I sources, the system's total capacity is increased, helping to minimize the potential for SSOs, and allowing for additional development. Flows originating from the East Street, Burnham Road, and Andover Street sub-basins have been estimated to operate with peak infiltration at 15%, 68%, 31% respectively, during the high groundwater season.

Impact if not completed:

Tewksbury's sewer enterprise operates under regulations promulgated by the Massachusetts Department of Environmental Protection (MassDEP). Each year, Tewksbury is required to investigate its system and make repairs. The investigation for I/I sources also allow staff to review the structural condition of the infrastructure to prioritize repairs. Although this is a requirement of the Town's discharge permit, it is a beneficial program designed to ensure a long range return on the investment made in the new sewer network. By finding and eliminating extraneous flow, the increased capacity of the new system is maintained over a greater number of years. Also, peak flows may surcharge sewer collection pipe capacity and contribute to residential sewer system backups, causing damage and cost to the Town.

Timeframe:

The pipe repair and replacement will be contracted out for FY2019.

Replacement Freq.: 5-25 Years

Stakeholders:

All sewer customers, DPW Water & Sewer Division, MassDEP, Lowell Regional Wastewater Utility (LRWWU)

Operating Budget Impact:

Engineering Division and Water & Sewer Division personnel time will be required to support the projects to be completed.

Cost Analysis:

Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$350,000.00	\$350,000.00	\$350,000.00	\$350,000.00	\$550,000.00	\$1,950,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$350,000.00	\$350,000.00	\$350,000.00	\$350,000.00	\$550,000.00	\$1,950,000.00

Sewer
5-Year Project Cost Estimates

Budget Cost Elements	2019	2020	2021	2022	2023	TOTAL
Site Acquisition						
Design/Eng.	\$30,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30,000.00
Construction	\$525,000.00	\$475,000.00	\$500,000.00	\$400,000.00	\$550,000.00	\$2,450,000.00
Equipment						\$0.00
Contingency						\$0.00
TOTAL	\$555,000.00	\$475,000.00	\$500,000.00	\$400,000.00	\$550,000.00	\$2,480,000.00

SEWER Fiscal Year	Program	Work Description	Location	Funding Source	Cost
FY2019	Cal yr: 2018-2019	Infiltration and Inflow (I/I) Control			
		Pipe Repair and Replace			\$300,000.00
		Manhole Repair/chemical grout			\$50,000.00
		Dig and Replace/Slip Lining Based on FY17-18 Camera/Investigation and DEP approval of I/I Plan			
		Various Locations			
		Pump Station Improvmt's			
		Design in-line grinder at Heather Row Pump Station (Detail to be model for Other Stations)			\$30,000.00
		Pump Station improvements (non-participating item in Hazard Mitigation Grant)			\$175,000.00
				Total Cost FY19	\$555,000.00
FY2020	Cal yr: 2019-2020	Infiltration and Inflow (I/I) Control			
		Pipe Repair and Replace			\$300,000.00
		Manhole Repair			\$50,000.00
		Dig and Replace/Slip Lining Based on FY18-19 Camera/Investigation			
		Various Locations			
		Pump Station Improvmt's			
		Install In-line Grinder at Heath Row Pump Station			\$125,000.00
				Total Cost FY18	\$475,000.00
FY2021	Cal yr: 2020-2021	Infiltration and Inflow (I/I) Control			
		Pipe Repair and Replace			\$300,000.00
		Manhole Repair			\$50,000.00
		Dig and Replace/Slip Lining Based on FY19-20 Camera/Investigation			
		Various Locations			
		Pump Station Improvmt's			
		Install Grinder(s) at Devonshire and Riverdale Pump Stations			\$150,000.00
				Total Cost FY19	\$500,000.00

FY2022

Cal yr. 2021-2022

Infiltration and Inflow (I/I) Control

Pipe Repair and Replace
Manhole Repair/ adjustment
Dig and Replace/Slip Lining Based on FY20-21 Camera/Investigation
Various Locations

\$300,000.00
\$50,000.00

Pump Station Improvm'ts

Repairs and upgrades based on facility inspection and review

\$50,000.00

Total Cost FY20

\$400,000.00

FY2023

Cal yr. 2022-2023

Infiltration and Inflow (I/I) Control

Pipe Repair and Replace
Manhole Repair/ adjustment
Dig and Replace/Slip Lining Based on FY21-22 Camera/Investigation
Various Locations

\$500,000.00
\$50,000.00

Pump Station Improvm'ts

Total Cost FY21

\$550,000.00

DPW Water Enterprise



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Hydrant Replacement Program Date: 01/02/2018

Project ID Number: _____ Revision Date: _____

Submitted By: Brian Gilbert, Supt DPW Department: Public Works Dept. Priority: _____

First Year Submission: Phone #: 978-640-4440 Email: bgilbert@tewksbury-ma.gov

Description of Project:

This annual program is intended to replace aging, malfunctioning, and/or out-of-service fire hydrants and to implement the standardization of hydrants throughout Town. The project began in 2006 and was reinstated in 2010 to address a large number of out-of-service hydrants. Since 2010 over 300 hydrants have been replaced.

In 2006, it had been estimated that 600 of the approximate 1,600 hydrants needed replacement. Funding for 5 years of the program has been approved at various Town Meetings at differing amounts beginning in FY2006. This year's request and continuing appropriations through 2022 include the installation of 5 additional hydrants. These additional hydrants will be placed at the end of dead-end water mains to facilitate the full flushing/cleaning of the water main, to improve water quality at these locations.

Justification/Benefit:

A number of hydrants within the system have out-lived their useful life cycle and show signs of fatigue or, in some instances, may be difficult to operate. Upgrading existing hydrants that are inoperable and/or do not meet the Town-wide hydrant standard is important to fire protection efforts and ISO ratings. In addition, there are 11 different types of hydrants within the system, reducing operation consistency: some open left, some open right; parts are not interchangeable, requiring procurement of a variety of parts and distributors for repairs, which tie up a large amount of the operating budget in inventory.

A number of older developments have distribution mains without the inclusion of a hydrant at the end of the water main to ensure the complete flushing of the water main. These sections of pipe need to be periodically flushed to improve water quality.

Impact if not completed:

Malfunctioning or out-of-service hydrants delay firefighting operations. Leaking hydrants waste water, increasing the system's Unaccounted for Water (UAW); the inability to flush water mains via a hydrant leads to diminished water quality in some neighborhoods; stocking of parts for multiple hydrant types ties up capital and decreases operational efficiencies.

Timeframe:

Approximately 25-30 hydrants will be replaced or newly installed in FY2019.

Replacement Freq.: 25 Years

Stakeholders:

Fire Department personnel, Tewksbury residents/businesses, and Department of Public Works Water Division staff

Operating Budget Impact:

Engineering Division and Water Division personnel time will be required to support the project.

Cost Analysis:

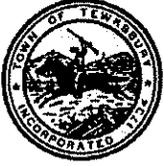
Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Construction	\$125,000.00	\$125,000.00	\$125,000.00	\$125,000.00	\$100,000.00	\$600,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$125,000.00	\$125,000.00	\$125,000.00	\$125,000.00	\$100,000.00	\$600,000.00

Basis of Cost Projection:

Cost Projection based on similar contract bid by the Town of Tewksbury in FY17.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Water Distribution System Improvements

Date: 01/02/2018

Project ID Number: _____

Revision Date: _____

Submitted By: Brian Gilbert, Supt DPW Department: Department of Public Works Priority: _____

First Year Submission: Phone #: 978-640-4440

Email: bgilbert@tewksbury-ma.gov

Description of Project:

The Department Public Works is in the process of developing a Water Distribution System Master Plan to guide an on-going effort to remove and replace old pipe varying in size and made from cast-iron and asbestos cement. Proposed replacements will seek to maximize fire flow capacity, reduce residency time in the pipe, while looping system reaches for redundancy, reducing the frequency of main breaks and improving water quality.

This request seeks to fund the upgrade of the Town's water distribution system prior to the commencement of two roadway improvement projects on Main Street. Both roadway improvement projects are to be constructed by the Massachusetts Department of Transportation. All underground utility improvements must be completed prior to the State's road construction. The two locations for water upgrades include Old Boston Road to Colonial Drive; and within the work limits of the South/Salem/Main Street intersection improvement project. The Old Boston to Colonial Dr. water-work will be phased project over two years. Planned roadway improvements for South/Salem and Main Streets are scheduled to begin in 2019.

Justification/Benefit:

The installation and replacement of existing water mains throughout the project work limits will enhance fire protection capabilities and improve water flows/pressures in these areas. In addition, replacement will remove a portion of the Town's deteriorating AC pipe. Most importantly the replacement of deteriorating pipe will minimize the risk of water-breaks and necessity to for street openings within the improved project areas.

Impact if not completed:

Existing water pipe material is prone to breaking, requiring the roadway to be excavated and patched. Unexpected service outages will result from continued water main breaks.

Timeframe:

Replacement Freq.: 50 Years

Construction will begin in FY19. Construction funding anticipates replacement of a total of 1.3 miles of new pipe and 7/10 mile of renewed services.

Stakeholders:

Water customers (Town residents, commercial establishments, institutions, etc.), Tewksbury Fire Dept., Department of Public Works Water Division

Operating Budget Impact:

Replacement of asbestos cement (AC) and cast iron (CI) pipe with newer ductile iron (DI) pipe will result in fewer water main breaks for that section, and will reduce the associated costs with repairs and wasted water.

Cost Analysis:

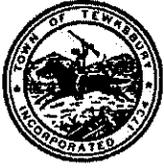
Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineering	\$0.00	\$100,000.00	\$0.00	\$100,000.00	\$0.00	\$200,000.00
Construction	\$2,000,000.00	\$2,000,000.00	\$2,016,000.00	\$2,000,000.00	\$2,000,000.00	\$10,016,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Basis of Cost Projection:

Construction costs for Main Street improvements are based on Engineer's proposal.



Town of Tewksbury FY2019 - FY2023 Capital Improvements Projects

Project Name: Astle Street Water Tank Project Improvements

Date: 01/02/2018

Project ID Number: _____

Revision Date: _____

Submitted By: Brian Gilbert, Supt. DPW

Department: Public Works Dept. Priority: _____

First Year Submission: Phone #: 978-640-4440

Email: bgilbert@tewksbury-ma.gov

Description of Project:

This project is requesting funds to develop plans and specifications based on an assessment to modify the Astle St water tank funded within the FY16 Capital Budget. The assessment established a program for engineering and designing a structural improvement to remove the Cell Carrier antennas from the cat-walk on the tank's superstructure. The assessment included an inventory of existing cellular equipment and requirements to remove any and all abandoned equipment; provide conceptual design to organize and move all municipal and carrier equipment, including cabling, off the catwalk and onto the top of the water tank; and to provide a structural analysis for the selected modification. As part of the design phase, any structural deficiencies and necessary modifications to the cat-walk will be incorporated to meet or exceed OSHA regulations regarding fall protection. The specifications shall also incorporate relocating all municipal radio equipment into the radio shack provided by Sprint. This project will fund the engineering and design plans for bidding the work.

Justification/Benefit:

The tank is a one million gallon steel tank built in 1970 and then refurbished in 2000 due to deferred maintenance and support structures for cell carriers being welded to the outside structure. Since 2000 numerous installations and reinstallations of cell carrier components have been placed on the tank, where no standard specifications and organization of the equipment were provided. The result is a myriad of cables and antennas gone unchecked and installed in locations not designed for the purpose of cell tower equipment.

In previous Capital Plans, the Astle Street Tank was scheduled for inspection, structural repair and an application of exterior coating. However, observations have been made that the catwalk sections flex and may need reinforcement to prevent walkway failure; while the weight of numerous antenna equipment and cable exceed structural specifications of the structure. A scheme for equipment organization is necessary for the long-term maintenance and use of the tank.

Impact if not completed:

The tank and catwalk may experience structural failures due to deterioration and/or cellular network equipment overloading. Continued interruption of town network/cellular service due to contractor disturbance of Town micro-wave equipment; and access/maintenance of Town communication system will remain problematic.

Timeframe:

Replacement Freq.: 25 Years

This work will be scheduled during FY19 requesting engineering and design services to establish plans and specifications for bidding the work

Stakeholders:

All water customers, DPW Water & Sewer Division and Water Treatment Plant, MassDEP/EPA, Cell Carriers and aerial workers.

Operating Budget Impact:

The project impact has more bearing on capital and asset protection than operating budget impact. However, maintenance of the municipal radio and microwave system(s) will be more accessible.

Cost Analysis:

Funding Source: Levy CPA Revolving State Aid Water Sewer Recreation Private Other

Capital Funding Request

	2019	2020	2021	2022	2023	Totals
Site Acquisition	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Design/Engineer	\$90,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$90,000.00
Construction	\$0.00	\$1,000,000.00	\$0.00	\$0.00	\$0.00	\$1,000,000.00
Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Totals	\$90,000.00	\$1,000,000.00	\$0.00	\$0.00	\$0.00	\$1,090,000.00

Basis of Cost Projection:

Cost will be based on Engineering estimate as outlined in the assessment.

FY2022	Cal2021-2022		
Water Distribution Improvements			
Hydrant Replacement/Install	Replace older and terminal hydrants at various locations based on survey		\$125,000.00
Water Distribution Upgrades	Engineer/Design Distribution Main upgrades: Various Locations based on Master Plan	2" and 6" inch Water Main	\$100,000.00
Water Distribution Upgrades	Construct Distribution Main upgrades based on FY2020 design		\$2,000,000.00
Water Plant Improvement			\$0.00
		Total Cost FY20	\$2,225,000.00
FY2023	Cal22-2023		
Water Distribution Improvements			
Hydrant Replacement/Install	Replace older and terminal hydrants at various locations based on survey		\$125,000.00
Water Distribution Upgrades	Construct Distribution Main upgrades based on FY2022 Design	2" and 6" inch Water Main	\$2,000,000.00
Water Plant Improvement			\$0.00
		Total Cost FY21	\$2,125,000.00

