TOWN OF SAUGUS

Essex, ss.
To the Constable of the Town of Saugus

Greetings:
In the name of the Commonwealth of Massachusetts you are hereby required to notify and warn the inhabitants of the Town of Saugus, qualified to vote in Town affairs for the Special Town Meeting at the Saugus Town Hall located at 298 Central Street on May 1, 2017 at 7:30 PM to hear and act on the following articles: viz;

Article 1: To see if the Town will vote to raise and appropriate or transfer from available funds a sum of money to be transferred to the Stabilization Fund. (Town Manager)

Article 2: To see if the Town will vote to appropriate or transfer from available funds a sum of money for the purpose of funding maintenance and repairs of the parks and playgrounds in the Town. (Town Manager)

Article 3: To see if the Town will vote to raise and appropriate or transfer from available funds a sum of money to be transferred to the OPEB Trust (Other Post-Employment Benefits Trust). (Town Manager).

Article 4: To see if the Town will vote to appropriate a sum of money for designing, constructing, repairing and replacing parks and playgrounds in the Town, including the payments of costs incidental or related thereto; to determine whether this appropriation shall be raised by borrowing or otherwise; or to take any other action relative thereto. (Town Manager).

Article 5: To see if the Town will vote to appropriate a sum of money for the purchase of Chromebooks for the Saugus Public Schools, including payments of costs incidental or related there to; to determine whether this appropriation shall be raised by borrowing or otherwise; or to take any other action relative thereto. (Town Manager).

Article 6: To see if the Town will vote to appropriate a sum of money for capital improvements to the Town's Lincoln Avenue Pumping Station, including the payments of costs incidental or related thereto; to determine whether this appropriation shall be raised by borrowing or otherwise; or to take any other action relative thereto. (Town Manager).

COMMONWEALTH OF MASSACHUSETTS

TOWN OF SAUGUS

Essex, SS.

To the Constable of the Town of Saugus

Greeting:

You are hereby directed to serve this warrant by posting attested copies thereof at the several voting precincts fourteen days, at least, before the time of holding such a meeting

Hereof, fail not and make due return of this warrant with your doings thereon to the Town Clerk at the time and place of said meeting.

Given under hands and Town seal this 12th day of April 2017.

TOWN OF SAUGUS
BOARD OF SELECTMEN

Debra C. Panetta, Chairmen

Scott A. Brazis, Vice Chairmen

Jennifer E. D'Eon

Jeffrey V. Cicolini

Mark D. Mitchell

COMMONWEALTH OF MASSACHUSETTS

Attestation of Service
By Town Clerk

Essex, ss.

As Town Clerk of the Town of Saugus Massachusetts, I hereby certify that copies of this warrant were committed to the custody of the Town Constable for posting at the several precinct voting locations through the Town and that further, copies of the same were sent via first class United States mail, postage prepaid, to the fifty Town Meeting members at their last know residential addresses, and that further copies of said warrant were given by me to the nine members of the Finance Committee, five member of the School Committee, five members of the Board of Selectmen, Town Manager and Town Counsel of the Town of Saugus, Massachusetts at least fourteen days prior to said meeting. Under the pains and penalties of perjury, attest;

Date: APRIL 13, 2017

Constable

Ellen J. Schena, Town Clerk

Article 1

S&P Global
Ratings

RatingsDirect®

Summary:

Saugus, Massachusetts; General Obligation

Primary Credit Analyst:
Steven E Waldeck, Boston (1) 617-530-8128; steven.waldeck@spglobal.com

Secondary Contact:
Christina Marin, Boston 617-530-8312; christina.marin@spglobal.com

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Summary:

Saugus, Massachusetts; General Obligation

Credit Profile

US$6.64 mil GO mun purp loan bnds ser 2016 due 08/01/2036		
Long Term Rating	AA+/Stable	New
US$2.541 mil GO BANs dtd 08/12/2016 due 08/11/2017		
Short Term Rating	SP-1+	New

Rationale

S&P Global Ratings assigned its 'AA+' long-term rating and stable outlook to Saugus, Mass.' series 2016 general obligation (GO) municipal-purpose loan bonds and assigned its 'AA+' long-term rating and stable outlook to the town's existing GO debt.

S&P Global Ratings also assigned its 'SP-1+' short-term rating to the town's bond anticipation notes (BANs).

Officials plan to use series 2016 bond proceeds to finance and refinance various municipal capital projects. The town's full-faith-and-credit pledge, subject to limitations of Proposition 2 1/2, secures the bonds. Despite limitations imposed by the commonwealth levy limit law, we did not make a rating distinction for the limited-tax GO pledge due to the town's flexibility under the levy limit.

The short-term rating reflects the application of our criteria for evaluating and rating BANs. In our view, the town maintains a very strong capacity to pay principal and interest when the BANs come due. The town maintains a low market-risk profile since it maintains strong legal authority to issue long-term debt to take out the BANs and because it is a frequent issuer that regularly provides ongoing disclosure to market participants.

We understand officials intend to use BAN proceeds to renew BANs outstanding with a new issue date of Aug. 12, 2016, payable Aug. 11, 2017.

The rating reflects our opinion of the town's:

- Very strong economy, with access to a broad and diverse metropolitan statistical area (MSA);
- Strong management, with good financial policies and practices under our Financial Management Assessment (FMA) methodology;
- Strong budgetary performance, with a slight operating surplus in the general fund and break-even operating results at the total governmental fund level in fiscal 2015;
- Strong budgetary flexibility, with an available fund balance in fiscal 2015 of 9.6% of operating expenditures;
- Very strong liquidity, with total government available cash at 11.4% of total governmental fund expenditures and 3x governmental debt service, and access to external liquidity we consider strong;
- Very strong debt and contingent liability position, with debt service carrying charges at 3.8% of expenditures and net direct debt that is 29.9% of total governmental fund revenue, as well as low overall net debt at less than 3% of market value and rapid amortization, with 66% of debt scheduled to be retired within 10 years, but a large pension

and other postemployment benefit (OPEB) obligation and the lack of a plan to sufficiently address the obligation; and
- Strong institutional framework score.

Very strong economy

We consider Saugus' economy very strong. The town, with an estimated population of 27,470, is located in Essex County in the Boston-Cambridge-Newton MSA, which we consider broad and diverse. The town has a projected per capita effective buying income of 121% of the national level and per capita market value of $142,835. Overall, the town's market value grew by 3% over the past year to $3.9 billion in 2016. The county unemployment rate was 5.2% in 2015.

Saugus is about 10 miles north of Boston. Lynnfield borders the town on the north while Lynn borders it on the east, Revere on the south, Wakefield on the southwest, and Melrose on the west. U.S. Route 1 passes through Saugus along a divided highway with five exit ramps throughout the town. This stretch of route 1 is lined with a major shopping district, including the Square One Mall; in addition, it is a major commuter route to and from Boston, heading toward the interchange of Interstate 95.

New developments in the town include the miniature golf site on route 1 for a mixed-use development approved by the planning board that will also include an approximately 250-room hotel, approximately 265 single-unit apartments, on-site retail stores, and commercial space. Management estimates the project will begin within one month. It also expects to receive an estimate of $1.3 million annually in added property tax revenue, as well as an increase in building permit fees. Another development on route 1 includes the Hilltop location, the sale of which has been approved to Avalon Bay, which plans to build approximately 300 housing units and additional retail in the front of the location.

Strong management

We view the town's management as strong, with good financial policies and practices under our FMA methodology, indicating financial practices exist in most areas, but that governance officials might not formalize or monitor all of them on a regular basis.

Strengths of the assessment, in our opinion, include management's:

- Strong revenue and expenditure assumptions when budgeting,
- Strong oversight in terms of monitoring progress against the budget during the year, and
- Long-term financial plan.

The town manager formed and adopted a finance committee in conjunction with the board of selectmen, and management reviews the results annually. Saugus has a detailed five-year capital improvement plan that it updates annually and that identifies funding sources for specified projects. The town also has an investment policy that mirrors commonwealth guidelines with quarterly reporting to the board. Finance committee members participated in a regular review of the budget compared to actual performance.

The adopted debt management policy targets debt service below 10% of the annual operating budget. Saugus had adopted reserve policies for emergencies, which include unreserved fund balance planned at 3%-5% of operating expenditures; the town is currently not at its target level for stabilization reserves, which is 5% of the operating budget.

We understand management is looking to build this account. In fiscal 2015, stabilization reserves were $2.34 million, or 3% of the operating budget.

Strong budgetary performance

Saugus' budgetary performance is strong in our opinion. The town had slight surplus operating results in the general fund of 0.7% of expenditures, and balanced results across all governmental funds of 0.1% of expenditures in fiscal 2015. General fund operating results of the town have been stable over the past three years, with a result of 2.5% of expenditures in 2014 and 2.3% of expenditures in 2013.

Saugus has achieved balanced operating results in each of the last three fiscal years due to positive revenue trends and conservative budgeting. Property taxes generate 73% of revenue and state aid accounts for 15%.

Management is projecting another surplus for fiscal 2016 at levels that are comparable to the previous two fiscal years. Based on consistent operating performance over the past several fiscal years and limited capital needs, we expect the town will continue to maintain its strong performance in fiscal 2017.

Strong budgetary flexibility

Saugus' budgetary flexibility is strong, in our view, with an available fund balance in fiscal 2015 of 9.6% of operating expenditures, or $7.5 million.

Management does not currently plan to spend fund balance down. We expect fund balance to remain strong, and it could possibly transition to very strong levels over time due to a projected surplus of $1.5 million. We understand it is management's goal to produce a surplus of 3%-5% annually through conservative budgeting to increase revenue.

Very strong liquidity

In our opinion, Saugus' liquidity is very strong, with total government available cash at 11.4% of total governmental fund expenditures and 3x governmental debt service in 2015. In our view, the town has strong access to external liquidity if necessary.

We believe Saugus' regular debt issuance supports its strong access to external liquidity. Saugus does not currently have any variable-rate or direct-purchase debt. It has consistently maintained very strong liquidity, and we expect our assessment of liquidity to remain unchanged during the outlook period.

Very strong debt and contingent liability profile

In our view, Saugus' debt and contingent liability profile is very strong. Total governmental fund debt service is 3.8% of total governmental fund expenditures, and net direct debt is 29.9% of total governmental fund revenue. Overall net debt is low at 0.6% of market value, and approximately 66% of direct debt is scheduled to be repaid within 10 years, which are, in our view, positive credit factors.

Total direct debt is $45.8 million, approximately $2.5 million of which is outstanding BANs. The town expects to issue an additional $5 million in debt over the next two years for various capital projects.

In our opinion, Saugus' large pension and OPEB obligation, without a plan in place that we think will sufficiently address the obligation, is a credit weakness. Saugus' combined required pension and actual OPEB contribution totaled 11.2% of total governmental fund expenditures in fiscal 2017. Of that amount, 7% represented required contributions

to pension obligations, and 4.3% represented OPEB payments. The town made its full annual required pension contribution in fiscal 2017. The funded ratio of the largest pension plan is 74.8%.

Saugus contributes to the Saugus Retirement System for employee pension benefits. Using updated reporting standards in accordance with Governmental Accounting Standards Board Statement Nos. 67 and 68, the town's share of the unfunded liability was about $89.8 million and 74.8% funded. Saugus has contributed 100% of the annual required contribution to the system in each of the past three fiscal years. The town has an amortization schedule in place with annual increases of 2% of the unfunded liability, and the plan will be fully funded by fiscal 2025.

Saugus provides OPEB through its own plan. The unfunded OPEB liability is approximately $104 million. Management adopted MGL Chapter 32B, Section 20, at the annual town meeting in June 2016 and made an opening deposit of $150,000. The town is currently working on formalizing a policy to appropriate funds to deposit into the OPEB trust. With no plans currently in place to fund this liability, we believe this liability could add future pressure to the budget.

Strong institutional framework

The institutional framework score for Massachusetts municipalities is strong.

Outlook

The stable outlook reflects S&P Global Ratings' opinion that Saugus will likely maintain its strong reserves, supported by strong management. We believe the town's participation in the broad and diverse Boston MSA provides additional rating stability; therefore, we do not expect to change the rating within the outlook's two-year period.

Upside scenario

Over time, if Saugus were to continue its strong budgetary performance, leading to an increase in reserves while mitigating long-term liabilities, coupled with an increase in economic indicators, we could raise the rating.

Downside scenario

While currently unlikely, if budgetary performance were to deteriorate significantly, leading to diminished reserves, we could lower the rating.

Related Research

- S&P Public Finance Local GO Criteria: How We Adjust Data For Analytic Consistency, Sept. 12, 2013
- Incorporating GASB 67 And 68: Evaluating Pension/OPEB Obligations Under Standard & Poor's U.S. Local Government GO Criteria, Sept. 2, 2015

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.globalcreditportal.com. All ratings affected by this rating action can be found on the S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box

located in the left column.

Article 2

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
DATE: **23-Dec-14**
Updated 2-26-17

Anna Parker Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost	
Basketball court	Good condition	Replace nets	Done	
		Add water fountain	$	2,500.00
		Add Permanent Trash Receptacles	$	1,500.00
Street Hockey Court	Good condition	Replace Hockey Nets	$	1,000.00
Tennis Court	Good Condition	Replace nets	$	1,000.00
		Cut back brush	$	3,000.00
Playground	4 swings, 7 benches,	Replace one slide	Done	
	1 climbing area, 1 zipline,	Replace holder in zipline	$	1,000.00
	Good Condition	Add 110 yds of mulch	Done	
		Add 110 yds of mulch in 2 years	$	5,000.00
Baseball Field	Good condition	Fix Depressions and Seed	$	10,000.00
		Routine Edging and Dragging	$	7,000.00
		Drag mats and Rakes	$	600.00
		Job Box	$	700.00
Various playing surfaces	Moderate condition	Seal Playing Surfaces	$	4,000.00
Park wide Fencing	Moderate Condition	Replace Fencing	$	75,000.00
Parking lot	Mod. to Poor condition	Reclaim and Pave a portion of area	$	80,000.00

Entrance and near fence	Brush Growth	Cut back brush	$	3,000.00
		TOTAL	**$**	**195,300.00**

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
DATE: **23-Dec-14**
Updated 2-26-17

Lynnhurst Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost
Basketball court	Moderate condition	Replace nets	DPW
		Replace Fence	$ 50,000.00
		Add Permanent Trash Receptacles	$ 1,500.00
		Add water fountain	$ 2,500.00
		Replace 2 benches	$ 1,500.00
Tennis court	Moderate condition	Add nets	$ 1,000.00
	Fence in good condition	Replace Fence	$ 50,000.00
	Court in moderate condition	Job Box	$ 700.00
Playground	2 sets of swings (4 and 2 ea.)	Clean slide	Done
	See saw and slide	replace fire engine	$ 15,000.00
	Fire engine	Paint overhang	Done
	2 benches	Replace one bench	$ 750.00
	Overhang	Replace RR ties	Done
	Moderate condition		
General/Softball		Add 200 yds of mulch	Done
		Add Mulch in 2 years	$ 8,000.00
		Drag Mats and Rakes	$ 600.00
		Job Box	$ 700.00
		Replace 400 lf of 4' fence around park	$ 20,000.00
		Replace 120 lf of 16' tall fence - backstops	$ 16,000.00
		Replace 32 lf of 5' tall fence - dugout	$ 2,000.00
		Replace sidewalk on elm street	Done

		Level field and Seed	$	10,000.00
		Routine edging and dragging of Field	$	7,000.00
		Cut brush	$	4,500.00
Paved areas atschool	Moderate to Poor condition	Reclaim areas and pave	$	200,000.00
		TOTAL	**$**	**391,750.00**

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds

DATE: **23-Dec-14**
Updated 2-26-17

Stackpole

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost
Basketball court	Good condition	Replace nets	DPW
		Crackseal	$ 7,000.00
Playground	2 sets of swings, one w/6 and one w/ 3, one missing from ea.	Replace two swings	Done
		Replace slide	$ 5,000.00
	Climbing area	Paint areas	$ 750.00
	Good Condition		
Baseball Field	Mod to Poor Condition	Regrade, fill, seed	$ 50,000.00
		Replace backstop and dugout fences	$ 50,000.00
		Replace benches	$ 3,000.00
		Drag mats and Rakes	$ 600.00
		Job box	$ 700.00
		Repairs to blue building	$ 6,000.00
		Create Bull pen areas	$ 4,000.00
		Replace stands	$ 70,000.00
		Routine Dragging	$ 10,000.00
Football/Soccer/lacross	Moderate Condition	Regrade, crown, fill, seed	$200,000
		Replace Stands	TBD
		Replace stone dust	$ 100,000.00
		Replace press box	$ 125,000.00
		Replace field goal posts and Flag pole	$ 50,000.00
Lacrosse Area	Adjacent to Field	Build practice wall	$ 100,000.00

Red Building	Moderate to poor condition	Replace	$	150,000.00
General		Replace fence	$	300,000.00
		Cut brush	$	6,000.00
		Mulch 100 yds	Done	
		Replace Mulch in 2 years	$	4,000.00
		Cut trees	$	100,000.00
		TOTAL	**$**	**1,342,050.00**

Oversite needs to be provided in this area to prevent to reoccuring Vandalism that is taking place.

Stackpole should be replaced with a Turf Field for at least Football but mostl likely baseball too. This will require a capital investment.
Also, many trees will have ot be cut to reduce maintenance costs and develop a plan for parking. Final a maintenace plan must be developed.

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
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Bristow Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost
Park rebuilt in 2016. Items below we from previous inspection. Consider an allocation to allow for future Maintenace to park. Fields (without fencing) would be $25,000 and Playground Equipment would be $15,000 Does not include major playground equipment replacement or major filed/court work.			
Basketball court	Good condition	Replace nets	DPW
	Has lights	Add water fountain	$ 1,500.00
		Add Permanent Trash Receptacles	$ 1,500.00
2 Baseball fields	Minor leagues	Replace 4 benches	$ 1,000.00
		Replace 100 lf of 4' fence	$ 5,000.00
		Replace 2 backstops 32' x 16' ea.	$ 8,000.00
		Add Stands	$40,000
General		Replace 250' of 4' fence with gate	$ 12,500.00
		Replace 400' of 8' fence - 96' w/ slates	$ 20,000.00
Playground	6 swings, slide, various	Replace one swing	$ 300.00
	climbing areas	Reset Bench	$ 300.00
	Good Condition	Add one bench	$ 1,500.00
		Add 175 yds of mulch	$ 7,000.00
		Remove overhang	$ 1,000.00

TOTAL	**$**	**99,600.00**

Saugus Department of Public Works
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Middle School Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost
Track	Moderate condition	Add Shot put area	Done
		Cut Brush	$ 7,000.00
		Repairs to Track	$ 25,000.00
		Remove Geese	$ 10,000.00
		Job Box	$ 700.00
Tennis Courts	Bad condition	Replace courts	Done
		Replace fence	Done
		Job Box	$ 700.00
Softball Field	Very Good condition	Routine Edging and Dragging	
		Drag mats and Rakes	$ 600.00
		Job box	$ 700.00
General	Parking areas	Replace sections of guard rail	$ 30,000.00
	Play areas near WS park	Reclaim areas and pave	$ 200,000.00
		Benches near WS park	$ 4,000.00

TOTAL **$ 278,700.00**

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
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Stocker Fields and Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost	
Basketball court	Good condition	Replace backboards	$	4,000.00
		Add 4 benches	$	3,200.00
		Add Water Fountain	$	2,500.00
		Add Permanent Trash Receptacles	$	1,500.00
Wiffle ball area	Good condition	Fix Fence	$	10,000.00
2 Baseball fields	Minor leagues	replace 60 ft of 4' tall fence @ dugout	$	3,000.00
		Replace 4 benches	$	3,200.00
		replace 2 backstops 32' x 16' each	$	8,000.00
		Drag fields, add infield mix and level fields	$	12,000.00
		Replace 1 set of wooden stands	$	30,000.00
		Drag Mats and Rakes	$	600.00
		Job Box	$	700.00
		Routine dragging	$	7,000.00
Playground	Slide and 2 sets of swings	Replace slide	$	10,000.00
		Add 50 yards of mulch	Done	
	Moderate Condition	Add mulch in 2 years	$	2,500.00
General		Replace 4' tall fence around park - 400 ft	$	20,000.00
		Cut back trees and remove downed tree	DPW	
		Cut back area on rt hand side as you drive in	$	2,000.00
		Cut back area on far side of field	$	2,000.00
		Improve entrance way	$	10,000.00

Boardwalk to River	$	100,000.00
Pave parking lot and SW infiltration	$	250,000.00
TOTAL	**$**	**482,200.00**

Consider Building a Water Park in this area as well as a Canoe/Kayak lauch area.

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
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Evans playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost	
Basketball court	Two side by side	Replace replace courts	$	50,000.00
	Bad condition	Add water fountain	$	2,500.00
		Add Permanent Trash Receptacles	$	1,500.00
		Add lights	$	50,000.00
		Add benches	$	3,000.00
		Replace Fence	$	35,000.00
Playground 1	4 swings, 1 slide, 1	Replace one swing	$	500.00
	bars, 1 sand box area	Replace mulch - 100 yds	Done	
	All in good shape	Replace Mulch in 2 years	$	4,000.00
Playground 2	4 swings, 3 spring toys	Replace mulch, 50 yds.	Done	
	All in good shape	Replace mulch in 2 years	$	2,000.00
Tennis Court	Fence - 80' x 88' - Eight	Replace Fence	$	35,000.00
	feet high. 2 courts 80' x 80'	Replace courts	$	50,000.00
	Not regulation size			
Misc paving	Broken paving is areas	Repair/replace paving	$	25,000.00
	Fix Sinking Parking Lot		$	35,000.00

TOTAL	**$**	**293,500.00**

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
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Oaklandvale Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost
Basketball court	Good condition	Replace nets	DPW
	Has lights	Add water fountain	$ 2,500.00
		Add Permanent Trash Receptacles	$ 1,500.00
		Cut back brush	$ 3,000.00
		Replace benches	$ 1,600.00
		Seal playing surface	$ 1,000.00
Playground 1	4 swings, 1 see saw,	Replace one swing	done
	1 slide, 1 fire engine	replace fire engine	$ 15,000.00
	Moderate Condition		
Playground 2	4 swings,	Replace benches	$ 15,000.00
	2 picnic benches		
	Moderate Condition		
General		Remove concrete post in ground	Done
		Replace 100 lf of fence	$ 5,000.00
		Paint new student line up line	Done
		Misc Paving	$ 5,000.00
		Pave from parking area to play area	$ 12,000.00
		Replace rubber mulch	Done
		Crak seak playing and parking areas	$ 20,000.00
Baseball Field	TBD	TBD	TBD
		Drag mats and Rakes	$ 600.00

Job Box	$	700.00
TOTAL	**$**	**82,900.00**

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
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Veterans School Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost	
Basketball court	Replaced in 2016	Add water fountain	$	2,500.00
		Maintenance Costs	TBD	
Playground	Replaced in 2016	Mainrtenance Costs	TBD	
Theatre area in back	Good condition	Paint light poles	$	1,000.00
		Powerwash areas	$	1,000.00
Baseball Field	Good Condition	TBD	TBD	
		Drag Mats and Rakes	$	600.00
		Job Box	$	700.00
General		Replace 150 lf on black coated fence	$	7,500.00
		Replace No Tresspass signs	Done	
		Cut back brush	$	6,000.00
		Misc Paving	$	20,000.00
		TOTAL	**$**	**39,300.00**

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds

DATE: **23-Dec-14**
Updated 2-26-17

Golden Hills Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost	
Basketball court	Moderate condition	Replace nets	DPW	
	Has lights	Replace RR tie retaining wall and perimeter	$	10,000.00
		Add Permanent Trash Receptacles	$	1,500.00
		Cut back brush	$	3,000.00
		Replace 4 benches	$	3,000.00
		Add crushed stone dust	Done	
		Seal coat playing surface	$	1,000.00
Playground	2 sets of swings (4 and 3 ea.)	Replace metal stairs to climb area	$	1,500.00
	Climb area and slides	replace fire engine	$	15,000.00
	Fire engine	Paint wooden areas	Done	
	Picnic table - wood	Replace gate	$	500.00
	Bench - wood	Replace 75 yds of mulch	Done	
	Good to moderate condition	Replace mulch 2 years from now	$	3,000.00
		Replace Water Fountain	$	2,500.00
		Paint Concrete walls	$	2,000.00
Misc	Parking	Add Dedicated Parking area	$	10,000.00

It is my understanding that a piece of land that is adjacent to this park was recently donated to the Town. This could result in a significant expansion and improvement to this area.

TOTAL	**$**	**53,000.00**

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
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Prankers Pond

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost	
Field area	Moderate condition	Replace benches	$	3,000.00
		New gate	$	3,000.00
		Dock	$	30,000.00
		TOTAL	**$**	**36,000.00**

Saugus Department of Public Works
Evaluation of Town Parks and Playgrounds
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Waybright School Playground

Equipment/Materials	Details	Recommended repairs/improvements	Estimated Cost
Basketball court	Moderate to bad condition	Replace Courts	$ 50,000.00
		Add water fountain	$ 2,500.00
Playground	2 sets of swings, both with 4, one swing missing, climbing areas , etc. Good Condition	Replace one swing	Done
		Replace wood clips - 80 yds	Done
		Replace 4 RR ties	Done
		Add 200 yards of Mulch	Done
		Add Mulch in 2 years	$ 12,000.00
		Add Curb	Done
Softball Field	Good condition	Fill low areas and drag field	Done
		Replace backstop and Dogout fences (32 ft of 8'x8' & two 16' x 16' sections)	$ 12,000.00
		Level playing areas, edging and Seed	$ 10,000.00
		Routine dragging	$ 7,000.00
		Drag mats and Rakes	$ 600.00
		Job Box	$ 700.00
Baseball Field	Minor league field poor condition	Create field	$ 40,000.00
		Replace backstop and Dogout fences (32 ft of 8'x8' & two 16' x 16' sections)	$ 12,000.00
		Routine dragging	$ 7,000.00
		Drag mats and Rakes	$ 600.00
		Job Box	$ 700.00
General		Add fence to bridge over brook	$ 3,000.00
		Clean brook	$ 10,000.00
		Cut back brush	$ 9,000.00
		TOTAL	**$ 177,100.00**

Article 3

Print

PART I ADMINISTRATION OF THE GOVERNMENT

TITLE IV CIVIL SERVICE, RETIREMENTS AND PENSIONS

CHAPTER 32B CONTRIBUTORY GROUP GENERAL OR BLANKET INSURANCE FOR PERSONS IN THE SERVICE OF COUNTIES, CITIES, TOWNS AND DISTRICTS, AND THEIR DEPENDENTS

Section 20 Other Post-Employment Benefits Liability Trust Fund

Section 20. (a) A city, town, district, county or municipal lighting plant that accepts this section may establish an Other Post?Employment Benefits Liability Trust Fund, and may appropriate amounts to be credited to the fund. Any interest or other income generated by the fund shall be added to and become part of the fund. Amounts that a governmental unit receives as a sponsor of a qualified retiree prescription drug plan under 42 U.S.C. section 1395w?132 may be added to and become part of the fund. All monies held in the fund shall be segregated from other funds and shall not be subject to the claims of any general creditor of the city, town, district, county or municipal lighting plant.

(b) The custodian of the fund shall be (i) a designee appointed by the board of a municipal lighting plant; (ii) the treasurer of any other governmental unit; or (iii) if designated by the city, town, district, county or municipal lighting plant in the same manner as acceptance prescribed in this section, the State Retiree Benefits Trust Fund board of trustees established in section 24A of chapter 32A, provided that the board of trustees accepts the designation. The custodian may employ an outside custodial service to hold the monies in the fund. Monies in the fund shall be invested and reinvested by the custodian consistent with the prudent investor rule established in chapter 203C and may, with the approval of the State Retiree Benefits Trust Fund board of trustees, be invested in the State Retiree Benefits Trust Fund established in section 24 of chapter 32A.

(c) This section may be accepted in a city having a Plan D or Plan E charter, by vote of the city council; in any other city, by vote of the city council and approval of the mayor; in a town, by vote of the town at a town meeting; in a district, by vote of the governing board; in a municipal lighting plant, by vote of the board; and in a county, by vote of the county commissioners.

(d) Every city, town, district, county and municipal lighting plant shall annually submit to the public employee retirement administration commission, on or before December 31, a summary of its other post-employment benefits cost and obligations and all related information required under Government Accounting Standards Board standard 45, in this subsection called "GASB 45", covering the last fiscal or calendar year for which this information is available. On or before June 30 of the following year, the public employee

retirement administration commission shall notify any entity submitting this summary of any concerns that the commission may have or any areas in which the summary does not conform to the requirements of GASB 45 or other standards that the commission may establish. The public employee retirement administration commission shall file a summary report of the information received under this subsection with the chairs of the house and senate committees on ways and means, the secretary of administration and finance and the board of trustees of the State Retiree Benefits Trust Fund.

Article 4 - May 1, 2017 STM

Estimate of expenditures of $500,000.00 borrowing

Cameras & security at Vets, Bristow, & Belmonte	$ 109,000.00
Lighting at Vets & Belmonte Middle School	$ 182,000.00
Curbs & Sidewalks at Bristow Street	$ 11,000.00
Parks and/or Playground equipment modifications	$ 70,000.00
Building at Bristow Street for restroom/concession/storage	$ 125,000.00
Installation of utilities - materials at Bristow	$ 3,000.00
	$ 500,000.00

Article 5

Saugus Public Schools

23 Main Street
Saugus, Massachusetts 01906
(781) 231-5000 ext 117
dderuosi@saugus.k12.ma.us

Dr. David DeRuosi, Jr.
Superintendent of Schools

April 25, 2017

To: Mr. Scott Crabtree
Re: Chromebooks

Mr. Crabtree,

There is a growing demand for our students to have the support of 1:1 devices as part of their educational environment. Testing for our English Language Learners and MCAS test are moving to an online format. This year our students in grades 3-8 took the MCAS online and we recognized the lack of 1:1 devices for our students which made this task more complicated for the district.

As a school district we are looking to purchase online text books in place of traditional hard copy texts, and we wish to expand options for on-line learning for our high school students. All of these initiatives demonstrate a need as a district to increase our technology supports for students. As we look to the future we have an Educational Plan, which will expand S.T.E.A.M. and S.T.E.M. programs to ensure our students will be competitive as we prepare them for a postsecondary life.

The $82,000 dollar request for Chromebooks will allow the district to purchase 13 carts with 25 Chromebooks per cart providing an additional 325 Chromebooks. These carts will be distributed within the district to support student learning.

Thank you for your support.

Sincerely,

Superintendent
Dr. David DeRuosi,Jr.

Article 6

Weston & Sampson

5 Centennial Drive, Peabody, MA 01960 (HQ)
Tel: 978.532.1900

MEMORANDUM

TO: Brendan B. O'Regan, Director – Town of Saugus DPW

FROM: Corey N. Repucci

DATE: January 20, 2017

SUBJECT: Lincoln Avenue Vulnerability Assessment – Memorandum of Findings

Introduction

Weston & Sampson has prepared this memorandum as part of our Lincoln Avenue Vulnerability Assessment project. The main goal of the project was to evaluate key items of the system, which if they failed, would result in a critical impact to the station, the sewer system or the surrounding environment. Vulnerability can encompass a wide range of different concerns. The primary areas of potential vulnerability are those things that can inhibit the function of the pump station to adequately pump the wastewater flows that enter the facility. However, there are additional areas of concern that include the safety of the operations staff, the structures themselves, building systems such as HVAC, the ability of the staff to be notified of and to respond to alarms, the interface with the commercial electric supply, regulations/permitting, training and long term staff succession.

As part of the half-day field visit to the station, Weston & Sampson also looked at visible piping, valves and other mechanical systems to identify readily observable deficiencies. Identified vulnerabilities, along with items previously identified in the 2014 Evaluation of Wastewater Pumping Stations report, have been assembled into a capital improvements plan/schedule.

Findings

On Thursday, October 27, 2016, Weston & Sampson visited the Lincoln Avenue Pump Station to discuss the project with representatives from the Town of Saugus and to tour the pump station. In attendance at the meeting were Brendan O'Regan (Saugus DPW Director), Tom Dinocco (Saugus Sewer Foreman), Corey Repucci (Weston & Sampson), Sal Ferrara (Weston & Sampson CMR) and Robert Cook (Weston & Sampson CMR). Prior to the kick-off meeting, the Town of Saugus asked that Weston & Sampson review 14-years (January 2002 through September 2016) worth of Lincoln Avenue monthly reports. In reviewing the monthly reports, the following items were noted by the station operator, Tom Dinocco.

Control Panel Area:

- Temperature gauges do not work,
- Panels go into fault during power spikes,
- Alarms occasionally do not dial out,
- Generator block heaters (4) do not work,
- Heat in the building goes out often.

Main Pump Station

- Gas detection systems do not work,
- There is a leak in the water lines to the main sluice gate operator at the wetwell,
- The gear box for the gate to the small wetwell does not work,
- Pump #3 is out of service – discharge knife gate broken in closed position,
- Pump #2 is tight to turn and is binding up,
- Flow Meter for the station is offline due to knife gate broken in closed position,
- Grates at the wetwell floor are not locked to the floor,
- Cracking is noticed at the dry-side second floor,
- Ceiling has a crack over the electrical pull box at the second floor,
- Air unit needs chimney,
- Pump in the parking lot needs electric fuel shut off replaced,
- A sewer water nozzle is needed in the corner of the small wetwell.

Kick-off Meeting

The goal is to evaluate the whole system. In general the recent approach has been to only look at and address specific items. Brendan (DPW Director) would like the deliverable provided by end of December 2016. Following the report delivery, the goal would be to move into design and have design completed by May 2017 with bidding July 2017. A goal of this report/subsequent project is to "eliminate emergencies" so other work can be properly planned.

The deliverable should include estimates for Construction and Engineering costs. If multiple options are available for improvements, carry the higher priced option for planning. No PEF has been submitted for the project, if they are pursued, the Town may solicit DEP for "uncommitted funds".

Brendan wants CMR to submit an amendment/proposal for an analysis of Generator Power and Normal Power. (CMR is in the planning to schedule this review within the next few weeks. The plan is to have an electrician on-site to power items down and to turn them on individually to see how the items are wired/powered.)

Brendan wants CMR to immediately evaluate the unreliable Alarm System for the station. *(CMR evaluated the alarms in mid-November 2016 and found no issues with the alarms. The Town should continue to monitor this.)*

Tommy Dinocco wants to eliminate the dry-pit centrifugal pumps and replace with dry-pit submersible pumps.

Review of Monthly Reports

Weston & Sampson reviewed the previously referenced monthly reports and noted the following:

- Pump #2 was installed in August 2005. Alignment and motor issues with Pump #2 were noted after install. Motor for Pump #2 taken out for repairs. In November 2005, Pump #2 motor is installed. It trips out on high amps due to a VFD issue. CDM, Associated Electro Mechanical and Yeomans onsite to troubleshoot.
- February 2006 Pump #2 throwing grease and new wires being pulled to Pump #3.
- New Chopper (comminutor) installed September 2006. Wiring and motor issues shortly thereafter.
- W&S work on installing new Pump #1 (January/February 2007).
- Motor issues for Pump #1 and #3 noted in May and August.
- Pump #3 has noise and panel issues in June 2008. Shutdown/locked out. Back on-line 8 days later.
- Fire Alarm System upgrade recommended April 2009.
- Main breakers at station replaced June 2009.
- Heating system evaluation June 2010.
- Chopper pulled for rehab June 2011.
- Waterline upgrading station May 2012 (heating upgrades).
- Sluice gate closed for unknown reason August 2013.
- January 2014 – Heat in building cannot rise above 54 degrees during single digit outside temperatures.
- Pump #2 pulled for repair by Williamson April 2014. Pump installed June 2014. Issues with pumping air, impeller nut damaging wear rings, and coupling through October 2014.
- W&S fixed recirculation lines in wetwell (not water lines to sluice gate) January 2015.
- Waterline repairs leak in heating system November 2011.
- Significant issues with Chopper in 2016. W&S frequent repairs and frequent failures. Saugus has IWWS pull and rebuild existing unit. Once installed unit failed one month later. Waterline Industries is under contract to install direct replacement unit. Unit expected to arrive January 2017.
- IWWS looked at evaluating and fixing Discharge Knife Gate on Pump #3. Could not fix. In process of fixing, knife gate down stream of flow meter failed in the closed position. Flow does not go through flow meter.
- Monthly reports note issues with existing fencing for the site.

Walkthrough of Station

During a walkthrough of the station and discussions with staff, the following items were noted:

- UPS at Control Panel was installed January 5, 2016.
- VFDs for Pumps. Old technology. Tough to get parts and not as efficient as new technology.
- VFD panel replacement may be necessary if VFDs are replaced and upsized to potentially install larger dry-pit submersible pumps (215 HP).

- VFDs noted as operating at 36 Hz during visit.
- Transfer Switches – Only 2 pumps can operate. CMR would like to test which ones and how to select during a shutdown of normal power.
- Existing Kirk Keyed System MCCs are 30 years old.
- Existing Generator is from 1988. Generator only has 367 operational hours on it. The Town does not have a "generator exercise" program for this generator. W&S recommends running the generator under load for at least 2 hours per month. The block heaters are not functioning. Kraft Power inspects the generator 4 times per year and is submitting a proposal to DPW for replacing the block heaters. The generator is water cooled.
- The standby pump in the driveway, which is used to discharge to the river, is exposed to the elements. Spare hoses, a new battery and an electric fuel shutoff are needed. Kraft Power services the unit.
- Wetwell intake air is contaminated by the exhaust air when the wind blows off the river. The intake and exhaust are too close. Operators have eliminated media from air handler (odor control) so as to try and force the exhaust air out further to reduce contamination.
- Scott AirPacs should be removed from station.
- Chemical storage included biological bugs for grease control and ZEP Sewer Aid FA (alkaline grease dissolver).
- Wetwell grating does not have anchor clips. Some grating is coming apart and some grating has limited contact with support edges. Grating should be replaced and provided with clips to hold in place.
- Wetwell has one existing comminutor (to be replaced in January 2017 by Waterline) and one bypass channel with a manual bar rack. If comminutor fails, flow is run through manual bar rack and operators need to be paid overtime to rake the rags from the bar rack. Look at providing redundant grinder.
- Hydraulically activated sluice gate. There is no "manual" bypass option for opening. Sal and Tommy indicate it takes approximately 5 minutes to open and close the gate when activated.
- Pumps rely on city water for seal water. A single booster pump skid system is manifolded into the seal water line. The skid system is only activated if there is a drop in city water pressure.
- Tommy wants to replace the sewage pumps with new dry pit submersible pumps. Dry pit submersible pumps would eliminate seal water use (potable) and it would eliminate pump/motor couplings and alignment issues. It would also be easier to pull the pump assembly for clog removal as the pump/motor is much more compact than the existing setup. The dry pit submersible pumps tend to be less efficient pumps and would have higher HP motors. These items will lead to additional operations costs. Additionally, dry pit submersible pumps tend to generate a lot of heat during operation.
- Pump #2 is binding up and Tommy indicates that two guys cannot turn the shaft with a strap wrench.
- Pump #3 is shut down as the discharge knife gate is broken in the closed position. Tommy indicates that Pump #3 likely needs to be re-built as when it did operate, it was very noisy.

- Suction and discharge valves for pumps are knife gates. Suction knife gates are non-bonneted style and discharge knife gates are bonneted
- Discharge Knife gate for Pump #2 shows signs of leaking/rusting at the top of the bonnet and the riser stem interface. Operators have not tried to unclog Pump #2 as they fear that if the discharge knife gate is closed that it will fail in the closed position and they will be left with only Pump #1 being operational.
- Pumps #1 & #3 have mechanical couplings. Pump #2 has a woods coupling. Tom Dinocco believes the mechanical coupling could not be installed by Williamson due to an alignment issue. The woods coupling at Pump #2 is showing signs of wear (i.e. throwing bits of rubber).
- Cracking of concrete was noticed at the access hatch above Pump #1 on the lower level, at the floor in the area of the backflow preventer on the intermediate level and at the ceiling above the electrical pull box on the intermediate level (area above is parking lot/driveway). Cracks above the electrical pull box have been epoxy crack injected (W&S CMR).

Items of Concern

1. The station is currently operating on two pumps, Pumps #1 and #2. There is a concern that Pump #2 could fail within the next year. Pump #2 is exhibiting signs of binding up/clogging, but operators fear that closing the knife gates may result in the knife gates getting stuck in the closed position. If Pump #2 was out of service due to broken knife gates, then the station would have only one available pump. It should be noted that signs of corrosion are present at the bonnet/stem interface of the discharge knife gate for Pump #2. No signs of corrosion were observed at a similar location for Pump #3. **All knife gates in the station should be considered for replacement and the pumps repaired**. Pump repairs which should occur are the unclogging of Pump #2 and correction of previously noted vibration at Pump #3. When replacing the knife gates, it is recommended that the Town consider using non-bonneted knife gates. Non-bonneted knife gates require some additional maintenance (packing adjustment) but are significantly less expensive, and also allow for potential repair at the gate/stem interface should a failure occur. As part of this work the rebuilding of the check valve at Pump 2, noted in the 2014 report, would be completed. The replacement of the valves and the maintenance of the pumps are the top priority; however other work, the installation of a bypass connection and station isolation valve, is required in order to perform this work.

2. **There is no bypass connection on the existing forcemain**, which would allow isolation of the interior piping while bypassing flow around the station. Installation of a bypass connection will be an asset at completion of the project as well, as it would limit the need to install above ground bypass piping should the station need to be isolated for work in the future. The Collection system O&M, for the station completed as part of the ACO work, indicates that the method of bypassing is pumping to the river.

The recommended way to complete the project would be to completely bypass the pump station. This would require the installation of bypass connection downstream of the knife gates, installation of a permanent isolation valve between the bypass connection and the most downstream knife gates on the intermediate level. Installation of the bypass connection would allow a bypass pump to

pump out of the manhole just upstream of the wetwell and into the newly installed bypass connection. This would allow all piping on the interior of the station to be isolated from the wastewater flow and provide the most effective means for completing the replacement of the knife gate valves and the repair of the pumps.

The installation of a bypass connection directly on the forcemain outside of the station is made difficult by the fact that the forcemain outside the building (ground elevation approx. 11.0-feet) is at a 45-degree angle. A 30-inch 45-degree fitting (CL elev. 0.67) is connected directly to the wall casting at the rear of the building where the forcemain exits the station. This 45-degree fitting allows the forcemain to drop steeply over a length of 20 to 25-feet until the FM invert elevation is approximately -24.0-feet. The FM then crosses under the Saugus River, inside a 48-inch secondary containment pipe, and runs long the old Boston & Maine Railroad line in Lynn, MA. In the area of Bennett Street, the forcemain exits the railroad bed and runs across a few properties to Day Street and Oracle Avenue prior to discharging at the Lynn Water and Sewer treatment facility. When asked, the Lynn Water and Sewer WWTF staff indicated that they do not have copies of the forcemain drawings for the Lincoln Avenue PS forcemain. The Town of Saugus should review records to see if the original pump station forcemain drawings and the 1980's Lincoln Avenue PS drawings are available. Copies of both documents should be stored in Saugus and at the Lynn Water and Sewer treatment facility.

OPTIONS FOR BYPASSING

Utilize Old 20-inch C.I. FM

Record Drawings for the Pump Station show that the old FM was to be plugged/capped inside the building as noted/specified. Details show that a blind flange and non-shrink grout/sand & cement slurry to be used. Photos from the 2014 field investigation do not appear to show a blind flange at the FM exiting the building (under front stairs). **Operations staff indicated that the old forcemain was plugged/filled with concrete during construction of the station. It is unlikely that the old forcemain could be re-used for bypassing flows.**

Install Tapping Sleeve and Valve on FM discharge (exterior) with bypass connection.

One option evaluated for the installation of an exterior bypass connection was the completion of an exterior 16"x30" hot tap on the force main and a line stop and permanent valve on the interior 8-foot length of pipe located in the stairwell of the pump station at the intermediate level.

For the line stop, a traditional folding line stop was evaluated. A 24-inch folding line stop (opens to fill 30-inch pipe) for a 30-inch ductile iron pipe requires a 54-inch long sleeve for the tap. With required mega flanges for a permanent valve installation and the preference to utilize a resilient seat gate valve for the permanent valve installation, there is not enough room to complete the work within the 8-foot pipe length accessible at the stairwell. Changing the resilient seat gate valve to a knife gate may make the installation feasible. A 24 x 30 folding line stop, requires that the installing contractor have approximately 25-feet of clear space to install the unit. In the Lincoln Avenue station, this would require coring through the HVAC chase above the stairwell, running up through the chemical feed/HVAC louver room located between the entrances to the dry and wet sites of the

pump station. It may also require that a core be drilled through the angled roof of the building. The cost to have a contractor, Furmanite in this case, install a temporary folding line stop is approximately $65,000. With the installation of a permanent isolation knife gate, mega flanges and the required cores through the station would add approximately another $75,000 to the job. This work would be completed at night and require the use of temporary pumper trucks to allow the forcemain to be inactive during the permanent valve installation. Temporary flow handling measures may add another $20,000 to the job. It is assumed that temporary flow handling measures would take place during the night during periods of low flow and dry weather. The estimated cost to install a traditional folding line stop and permanent knife gate is approximately $205,000, with contractors insurance, bonds, overhead and profit. A bypass connection would still be required.

Recognizing the high cost and difficulties associated with "traditional" line stops for the 30-inch discharge piping at the station, we reached out to another firm to discuss options. We met with South Shore Pipeline Services, Inc. (Donna D'Amore) at the station on December 6, 2016. Donna discussed her company and the fact that she takes pride in "thinking outside the box" for items like line stopping and live pipe tapping. Donna recommended that we consider the installation of temporary high pressure inflatable bag type line stop. In discussions with Donna, the installation of this temporary bag line stop could easily be completed in the stairwell of the building without the need to core through any concrete walls or floors. South Shore Pipeline estimated that the installation of the saddle (30-inch length), temporary line gate and completion of the line stop with a high pressure Petersen Plug (Series 129) could be completed for approximately $32,000. In order to completely isolate the discharge and suction piping, we would also recommend the installation of a 30-inch resilient seat gate valve on the line in the stairwell. Based upon available length, it appears that there would be limited issues with this approach. One item to be considered is the fact that there is a "Pig" detector located on this section of pipe. All efforts should be made to keep this in place and useable. The cost to furnish and install the valve and mega flanges is estimated at $50,000. This work would be completed at night and require the use of temporary pumper trucks to allow the forcemain to be inactive during the permanent valve installation. Temporary flow handling measures may add another $20,000 to the job. The estimated cost to complete the temporary high pressure plug line stop with permanent 30 inch gate valve is approximately $135,000 (total construction cost). With the approach described above, there is also the potential to finish the line stop saddle as a "permanent" bypass connection. A permanent valve could also be installed to replace the temporary line gate valve and this pipe could then be routed to the exterior of the building for a permanent bypass. As the bypass would only be used in times of emergency, it is possible that dealing with temporary piping leading to this connection point would not be an issue. Eliminating the exterior bypass would save a significant amount of money.

If an exterior hot tapped bypass connection is preferred, we would recommend that the hot tap be completed at the side of the pipe rather than the top of the pipe. Tapping at the side of the pipe and rotating the valve 2 bolt holes would result in the actuator being near plum for an extension to grade. The price to complete this item is estimated at $20,000. This work item would require the excavation of a hole that is approximately 15-18-feet deep and adjacent to the river. An allowance of $100,000 should be carried for the excavation, shoring and dewatering of this hole. An additional

$20,000 should be allocated to the piping/fitting connections required to bring the permanent bypass connection to grade. The total estimated cost for the exterior permanent bypass connection work is $180,000 (construction cost).

Whichever of the above methods is used, it would allow for the replacement of all existing knife gate valves, along with two additional isolation lines on the discharge header between both sets of pumps, and the maintenance of the pumps. It is estimated that a project which includes 1-month of bypass pumping rental ($75,000), pump maintenance ($15,000) and the replacement/installation of 16 non-bonneted knife gates ($400,000) would cost between $550,000 and $600,000 when factoring in contractor overhead and profit. When factoring in the work required to set-up a bypass, along with engineering and contingency, the estimated project cost for the valve replacement work is around $1,000,000. Detailed costs will be presented later in the memo.

3. The forcemain for the station is over 30-years old and is approximately two miles long. After the recent costly events related to a forcemain failure in Plymouth, MA, the forcemain for the pump station should be evaluated. Evaluation of the forcemain should start at available points of access, the air release structures. Available information indicates that there are approximately 5-air release structures on the forcemain. Steel thickness measurements would be conducted on the pipe segments which are accessible inside the air release structures and possibly at the discharge to the WWTF. It is estimated that the initial evaluation work and memorandum of findings could be completed for approximately $15,000.

   If readings indicate loss of pipeline mass, or show significant degradation, further evaluation would be recommended. This could include the excavation and shoring of test pits at various locations along the pipeline (by a General Contractor), additional ultrasonic thickness testing, soil corrosivity testing and the collection of pipeline coupon samples to determine actual pipe thicknesses and if the pipe is experiencing corrosion (inside or outside). It is estimated that performing up to 8 test pits, conducting additional pipeline ultrasonic thickness testing, soil corrosivity testing and collecting 8 coupon samples of the pipeline using tapping sleeves and valve assemblies and providing a report to document the findings of the analysis could cost on the order of $200,000.

   In the event that a secondary forcemain is installed, as a means of redundancy or as a result of findings of the condition assessment of the existing forcemain, the costs would be in the millions of dollars. It is estimated that the installation of a new 30-inch HDPE forcemain with river crossing and multiple jacking installations, approximate length 12,000 linear feet, would cost in excess of $12,500,000, including construction, engineering and contingency cost.

4. The Influent **sluice gate is hydraulically actuated with potable water**. The sluice gate is interlocked with float control switches on the drive side of the pump station. If the floats are tripped, the influent sluice gate will close as a method of protecting the infrastructure on the dry side of the station. The sluice gate does not appear to have a manual bypass for operation should the potable water system fail. It is likely that the unit would remain in the open position upon loss of water pressure, but this should be confirmed. If the gate were to close on actuator

failure the entire station would be shut down. **The water lines to the sluice gate are exhibiting signs of leaking**. The sluice vendor (Rodney Hunt) should be contacted to evaluate the system and provide input on upgrades and or replacement. It may be possible to modify/replace the actuator by utilizing anchors and chains to hold the sluice gate in the open position during repairs. While this work is being done the two operators for the wetwell isolation gates should be replaced as well.

5. The station has one comminutor and one bypass channel. When the comminutor is out of service, which has happened frequently lately, the operators need to run flow through the manual bar rack and rake the rack at all hours of the day/night (overtime expenditure). The Town has a contractor onboard to install a new replacement unit (anticipated January 2017), but the town should **consider the installation of a second comminutor**. The bypass channel is narrower than the comminutor channel, but there are options which would fit the existing channel and not require modifications to the concrete and the ability to handle peak or close to peak flows. In the event a unit cannot handle the 17.4 mgd peak flows, a bar rack extension could be added to the top of the unit to catch any large debris at the peak flow condition. **The Town may also want to consider changing to grinder technology rather than comminution**. The grinders are newer more robust technology, but they there is more headloss through a grinder unit. Assuming peak flow conditions of 17.4 mgd, there is approximately 28-inches more headloss through a dual drum grinder (JWC) sized to fit the bypass channel versus the current comminutor installed at the station. An upstream analysis would need to be completed to determine if installing a grinder system would negatively impact the upstream users. Purchase price for a new grinder type unit would be on the order of $175,000. When factoring in labor for electrical work and installation, the install price may be closer to $300,000. The full scope of electrical work required to install the new grinder unit is unknown and would need to be fully evaluated during design of station upgrades.

   It should be noted that the clogging of Pump #2 may be a result of the prior frequent shutdowns of the existing comminutor. When using the manual bar rack, which is meant to limit large materials from entering the wetwell, there are larger openings for debris and rags to enter the wetwell. Installation of a grinder technology in the bypass channel would protect the pumps should the primary grinder fail.

6. Tom Dinocco, the Saugus Sewer Foreman, has a wealth of experience and knowledge of the system. In a number of respects his knowledge is not replaceable. Tom is also nearing a well-deserved retirement. An immediate effort needs to begin to not only glean the information that Tom has, but to somehow add this into the institutional knowledge of the Saugus Sewer Department. Additionally, significant training of others is required to assist them in utilizing the knowledge that Tom can pass on.

7. **An analysis of the intake and exhaust air at the wetwell should be completed**. Adjustments may be required to limit cross contamination of exhaust air with intake air. Adjustments may result in the ability to utilize carbon air filters to limit emanating odors to the adjacent area outside of the pump station. Based upon a review of the monthly logs for the station, the new

heating system for the station appears to be "unreliable". **Evaluate existing heating system to recommend repairs which may improve reliability.** It is estimated that the HVAC system at the old pump station and the new pump station building can be inspected and a memorandum of findings/recommendations can be prepared for an estimated fee of $5,000 to $7,000.

8. Existing VFDs (Yaskawa GPD506) were replaced in 2003 by Associated Electro Mechanical. Contact with the vendor indicates that these **VFDs are 2 generations old**. Replacement VFDs may be more energy efficient and easier to service. Replacement of three new 200+/- HP VFDs is estimated at $100,000.

9. **Dedicated gas detection systems for wetwell and dry side of the pump station are non-functional.** Table 4.2.2 of the latest version of NFPA 820 indicates that a Combustible gas detection system is required in wetwells rated Class 1 Division 1 if there is any mechanical ventilation provided. Class 1 Division 2 rated wetwells require a combustible gas detection system as well. Per NFPA 820, the dry side of a below grade or partially below grade pump station does not require a combustible gas detection system. At a minimum, the gas detection system in the wetwell should be replaced to adhere to the NFPA 820 standards. Operators should also make sure to use portable gas detection meters, which are regularly calibrated, to ensure safety. A budget of $10,000 should be allocated to replacement of the existing gas detection system in the wetwell. An additional $10,000 should be allocated if replacement of the system on the dry side of the station is desired.

10. **Grating in the wetwell should be replaced.** Some of the grating is deteriorated, some grating appears to have limited contact with concrete, and the grating is not securely anchored to the floor.

11. Operators have indicated that the **control panels go into fault during power spikes**. Evaluate control panels and improve/replace as required. A cost of less than $5,000 would be required for an analysis of existing control panels with respect to TVSS equipment which is meant to protect equipment from power spikes.

12. **Standby generator should be improved**. Improvements should include replacement of all block heaters and establishing a regularly scheduled exercise program where the generator operates under load. A budget of $15,000 should be allocated to replacement of all block heaters and preparation of a generator operations and maintenance plan.

13. The operators use recycled wastewater to spray the top surface of the wetwells to **limit grease accumulation**. Consider improving system by adding additional nozzles or look at a dedicated "large bubble" wetwell mixing system (Pulsed Hydraulics, Enviromix). An approximate budget of $40,000 should be allocated to the purchase of the mixing system and controls. Approximately $75,000 should be allocated to purchase and installation of the equipment.

14. **Visible cracking on the intermediate level floor** should be evaluated by a structural engineer and repaired as recommended. A budget of $3,000 should be carried for a field

visit/recommended scope of work. Some costs have been carried for structural repairs in the recommended list of projects at the end of the report. The scope of work, as defined by a structural review, should be the costs carried moving forward.

15. **Monthly reports indicate fencing is falling down**. The operations staff previously indicated that a patron of Spud's restaurant drove into the fencing between the restaurant and the pump station site. Upon review, portions of the fencing are deteriorated and the chain-link fence should be replaced with new PVC coated chain-link fencing with a barbed wire top. An installed estimated cost for this fence is between $80 and $100 per linear foot. Based upon replacing approximately 500-feet of fencing, the estimated cost for the work is between $40,000 and $50,000.

Costs and Schedule

The following is a breakdown of the estimated costs for previously identified improvement recommendations (2014 Report) and new recommendations from the Vulnerability Study. Costs for previously identified improvements have been escalated to July 2017 using Boston, Past 24 Month, ENR numbers as the basis.

Initial Phase

The following ***Initial Phase*** items should be completed by Town staff or as part of a project in which the Town solicits quotes for the work. The majority of the tasks may able to be completed using existing Operations & Maintenance budget funds. A small engineering allowance has been allocated to the structural repairs noted below.

MISCELLANEOUS WORK BY STAFF	Est. Cost
The old Scot Air Pacs should be removed.	$ 600.00
Install belt guard on exhaust fan at Discharge Piping Level.	$ 200.00
Solenoid valve H158 should be replaced and the conduit should be reconnected	$ 300.00
Replace the corroding bolts at the backflow preventer	$ 900.00
The backflow preventer should be inspected	$ 200.00
Add an intake screen to the exhaust fan in the Pump Room	$ 300.00
Demolish/dispose of the old bubbler tube system	$ 2,800.00
TOTAL	**$ 5,300.00**

SEWER FOREMAN SUCCESSION PLANNING	$ 20,000.00

An estimated budget of $20,000 is allocated to additional training or overtime expenditures geared at improving operator training and documenting system knowledge of the current sewer foreman.

INITIAL FORCEMAIN INVESTIGATION	Est. Cost
Perform Ultrasonic Testing and Inspection of Forcemain	$ 15,000.00
Control Panel TVSS Analysis	$ 5,000.00
TOTAL	**$ 20,000.00**

ENGINEERING ANALYSIS	Est. Cost
HVAC System Investigation and Recommendations	$ 7,000.00
Structural Analysis of Existing Cracks	$ 3,000.00
TOTAL	**$ 10,000.00**

STRUCTURAL REPAIRS	Est. Cost
The cracked sidewalk at the front entry to the Old Building should be repaired	$ 3,400.00
The spiral stair case to the lower level of the Old Building and the ladder to the pipe galley area are severely corroded and should be repaired (or the old pumping station should be completely filled in/abandoned - Price shown is for repair only)	$ 16,800.00
The beam for the monorail on the loading dock should be sand blasted and painted	$ 2,800.00
Sealant should be replaced at the railing connection for the stairs to the loading dock of the New Building	$ 600.00
Cracking at the corners of the hatch above the wetwell and near the access stairs to the loading dock should be repaired	$ 1,700.00
Areas of exposed rebar at the rear of the New Building should be repaired/patched	$ 1,700.00
Three cracks at louvers for the New Building should be repaired	$ 1,700.00
The corroded louver at the rear side of the New Building should be replaced	$ 5,600.00
Replace Existing Damaged Aluminum Grating and Add Clips to Secure - Allowance	$ 7,500.00
Cracking was observed at the floor drain and aluminum grating near the backflow preventer should be repaired	$ 3,400.00
CONSTRUCTION TOTAL	$ 45,200.00
GC GEN. COND./OH&P	$ 13,600.00
ENGINEERING SERVICES (25%)	$ 14,700.00
CONTINGENCY (20%)	$ 14,700.00
TOTAL	**$ 89,000.00**

The ***Initial Phase*** tasks listed above carry an estimated budget of **$144,300**. The Initial Phase tasks, which include miscellaneous improvements to existing items at the Lincoln Avenue station, succession planning for the sewer department, a limited initial investigation of the integrity of the existing forcemain, evaluation of existing TVSS systems, evaluation of existing HVAC systems, evaluation of existing structural cracks and structural repairs to the existing infrastructure on the Lincoln Avenue Pump Station Site. The ***Initial Phase*** work should be completed as funding is available in annual operations budgets.

Phase 1

The following is a listing of projects recommended for completion at the pump station. Currently, the most pressing needs at the station are improvements to the reliability and functionality of the pumping system and piping systems inside the station. The first three projects listed below must be completed in succession to restore the functionality of the pumping and piping systems. In order to create a larger project, which may increase the number of contractors interested in bidding, the Town should consider also completing repairs at the wetwell as part of the ***Phase 1*** project.

EXTERIOR BYPASS CONNECTION	Est. Cost
Excavation, Shoring & Dewatering	$ 100,000.00
16-inch Hot Tap	$ 20,000.00
Piping Connections or Structure to Grade	$ 50,000.00
Spare Valve - On Shelf	$ 10,000.00
Replace Existing Chainlink Fence with new PVC Coated Chain Link Fence (w/barb-wire)	$ 50,000.00
CONSTRUCTION TOTAL	$ 230,000.00
GC GEN. COND./OH&P	$ 69,000.00
ENGINEERING SERVICES (25%)	$ 74,800.00
CONTINGENCY (20%)	$ 74,800.00
TOTAL	**$ 449,000.00**

INTERIOR LINE STOP AND ISOLATION VALVE	Est. Cost
Install 30 inch line stop	$ 32,000.00
Install 30-inch station isolation gate valve	$ 50,000.00
Temporary Flow Handling Allowance	$ 20,000.00
CONSTRUCTION TOTAL	$ 102,000.00
GC GEN. COND./OH&P	$ 30,600.00
ENGINEERING SERVICES (25%)	$ 33,200.00
CONTINGENCY (20%)	$ 33,200.00
TOTAL	**$ 199,000.00**

REPLACE ALL EXISTING KNIFE GATES	Est. Cost
Replace 14 existing knife gates (suction/discharge) and add 2 new knife gates for isolation - All non-bonneted	$ 400,000.00
Vibrations/Noise Analysis and Pump Maintenance - Allowance	$ 30,000.00
Clean Out Pump #2	$ 5,000.00
Rebuilt Existing Check Valves - Allowance	$ 20,000.00
Bypass Pumping (1-month) - Allowance	$ 75,000.00
CONSTRUCTION TOTAL	$ 530,000.00
GC GEN. COND./OH&P	$ 159,000.00
ENGINEERING SERVICES (25%)	$ 172,300.00
CONTINGENCY (20%)	$ 172,300.00
TOTAL	**$ 1,034,000.00**

INFLUENT SLUICE GATE AND WETWELL SLUICE GATE REPAIR	Est. Cost
Replace sluice gate operators on wetwell sluice gates.	$ 5,000.00
Repair leaking water piping (piston "up" piping) at wetwell influent sluice gate.	$ 500.00
Install New Stem and Electric Actuator (with manual bypass) on Influent Sluice Gate	$ 30,000.00
Add an alarm indicator for the sluice gate position in the Pump Room	$ 1,700.00
Add Large Bubble Wetwell Mixing System	$ 75,000.00
CONSTRUCTION TOTAL	$ 112,200.00
GC GEN. COND./OH&P	$ 33,700.00
ENGINEERING SERVICES (25%)	$ 36,500.00
CONTINGENCY (20%)	$ 36,500.00
TOTAL	**$ 219,000.00**

The estimated budget for the ***Phase 1*** project listed above is **$1,901,000**. The ***Phase 1*** project involves work required to isolate and bypass flow around the existing station, replacement of all existing knife gates, the addition of two knife gates to improve isolation capabilities and wetwell improvements. The wetwell improvements include replacement of sluice gate operators for each wetwell, a new stem and actuator for the influent sluice gate and a wetwell mixing system to control grease accumulation in the wetwell.

Phase 2

As part of ***Phase 2*** for the project, the installation of a redundant grinder, HVAC system modifications/improvements, pumping system evaluations and replacement existing VFDs and pumps are proposed.

GRINDER FOR BYPASS CHANNEL	Est. Cost
Add New Grinder Unit in Existing Bypass Channel	$ 200,000.00
Electrical Allowance	$ 30,000.00
CONSTRUCTION TOTAL	$ 230,000.00
GC GEN. COND./OH&P	$ 69,000.00
ENGINEERING SERVICES (15%)	$ 44,900.00
CONTINGENCY (20%)	$ 68,800.00
TOTAL	**$ 413,000.00**

HVAC/PLUMBING MODIFICATIONS	Est. Cost
New Fixed Gas Detection System at Wetwell	$ 10,000.00
Add Air Handling Unit to Basement of Old Operations Building which is still accessed by Operations Staff	$ 35,000.00
HVAC - The existing boiler should be replaced with one that is capable of providing the proper output	$ 55,900.00
HVAC - The existing air handling units and unit heaters at the facility should be replaced due to their age and failing condition	$ 167,600.00
Plumbing - Even though the toilet fixtures are operational, it is recommended that they be replaced with new low flow type	$ 1,700.00
CONSTRUCTION TOTAL	$ 270,200.00
GC GEN. COND./OH&P	$ 81,100.00
ENGINEERING SERVICES (25%)	$ 87,900.00
CONTINGENCY (20%)	$ 87,900.00
TOTAL	**$ 528,000.00**

PUMP SYSTEM STUDY	Est. Cost
Perform analysis of hydraulic conditions for pumping system prior to any major pumping modifications	**$ 28,000.00**

PUMP SYSTEM MODIFICATIONS	Est. Cost
Consider replacing the existing pumps with new dry-pit submersible pumps	$ 390,900.00
Replace Existing VFDs with New VFD Technology	$ 100,000.00
CONSTRUCTION TOTAL	$ 490,900.00
GC GEN. COND./OH&P	$ 147,300.00
ENGINEERING SERVICES (25%)	$ 159,600.00
CONTINGENCY (20%)	$ 159,600.00
TOTAL	**$ 958,000.00**

The ***Phase 2*** projects listed above are estimated at **$1,927,000**. The above projects include the installation of a grinder unit in the bypass channel to improve system redundancy, improvements to the existing air handling/heating systems at both buildings, minor plumbing improvements, a hydraulic analysis for the pumping system, replacement of existing outdated VFDs and the replacement of the existing pumps with new dry-pit submersible pumps.

Phase 3

The ***Phase 3*** projects listed below should be budgeted for completion as required. The forcemain itself is one of the most critical pieces of infrastructure for the station. The majority of the ***Phase 3*** project cost is related to a complete replacement of the existing forcemain. If the forcemain is found to be in good condition, this project may not be warranted in the near future. Conversely, if the results of the initial FM investigation show that further investigation is warranted, the implementation schedule for the ***Phase 3*** project may need to be accelerated.

SUPPLEMENTAL FORCEMAIN TESTING (If Warranted)	Est. Cost
Contractor Services - Excavation and Tapping Sleeve/Valve (8 pipe coupons)	$ 150,000.00
Engineering Analysis and Memo	$ 50,000.00
TOTAL	**$ 200,000.00**

FORCEMAIN REPLACEMENT	Est. Cost
30-inch HDPE FM Installation - Approx. 11,500	$ 3,500,000.00
River Crossing (approx. 600 lf) - Allowance	$ 1,000,000.00
Pipe Jacking (approx 4 locations)	$ 2,000,000.00
CONSTRUCTION TOTAL	$ 6,500,000.00
GC GEN. COND./OH&P	$ 1,950,000.00
ENGINEERING SERVICES (25%)	$ 2,112,500.00
CONTINGENCY (20%)	$ 2,112,500.00
TOTAL	**$12,675,000.00**

Phase 3 costs include the collection of coupon samples of the existing pipeline at up to eight (8) locations and the replacement of the existing forcemain with a new HDPE forcemain in a similar alignment to the current pipeline. The estimated budget for ***Phase 3*** is **$12,875,000**.

Funding/Implementation

The above breakdown of projects is one method for scheduling and packaging recommended repairs/improvements to the Lincoln Avenue Pump Station. The total cost above for all phases of the work is estimated at just under **$16,850,000**. Based upon available funding, the Town of Saugus may elect to package multiple projects together with the hope that a savings can be realized on construction and engineering. Conversely, if single projects need to be broken down into multiple projects, it should be understood that additional money may need to be allocated to additional engineering and construction costs.

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