

**BOARD OF FINANCE
TOWN OF BRANFORD, BRANFORD, CONNECTICUT 06405**

JOSEPH W. MOONEY, CHAIRMAN
CHARLES F. SHELTON, JR.
VICTOR J. CASSELLA
JEFFREY E. VAILETTE
KENNETH P. KAMINSKY
LORRAINE K. YOUNG



EX-OFFICIO
JAMES B. COSGROVE,
First Selectman

CLERK
LISA E. ARPIN, Town Clerk

**BOARD OF FINANCE SPECIAL MEETING
MINUTES FROM MAY 30, 2017**

TOWN CLERK'S OFFICE
BRANFORD, CONNECTICUT

2017 JUN 25 A 11: 26

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The meeting was called to order by Chairman Joseph Mooney at 7:30 p.m. at Fire Headquarters, 45 North Main Street. Board of Finance members present were: Victor Cassella, Ken Kaminsky, Lorraine Young, Charles Shelton and Jeffrey Vailette. Also in attendance were First Selectman Jamie Cosgrove, Finance Director Jim Finch, Assistant Finance Director Kathryn LaBanca and Town Clerk Lisa Arpin. RTM reps in attendance were Peter Black, Donald Conklin, Dennis Flanigan, Maryanne Hall, Robert Imperato, Ray Ingraham, Peter Jackson, Ed Prete, Chris Sullivan and Frank Twohill. In attendance from local media: Marsha Chambers, Pam Johnson and Steve Mazzacane.

- I. Chairman Mooney read the following resolution as a continuation from the last meeting, as no vote was taken at the meeting of May 22, 2017.

To consider and act on the following proposed resolution:

"RESOLUTION APPROPRIATING \$6,000,000 FOR THE TOWN OF BRANFORD TOWN-WIDE ENERGY CONSERVATION AND MODERNIZATION PROGRAM AND AUTHORIZING THE ISSUE OF \$6,000,000 BOND, LEASE OR OTHER FINANCING OF THE TOWN TO MEET SAID APPROPRIATION AND PENDING THE ISSUANCE THEREOF THE MAKING OF TEMPORARY BORROWINGS FOR SUCH PURPOSE"

and to recommend the resolution for adoption by the Representative Town Meeting.

Chairman Mooney welcomed back representatives from Honeywell and ECG Engineering as a continuance of their May 22nd presentations to the Board of Finance on the energy conservation project. Present were Aldo Massafferro of ECG Group (the Town's owner's rep); from Honeywell—Doreen Hamilton, Lisa Montalto, Zachary Loya and Venkat Iyer.

First Selectman Cosgrove opened the presentation explaining the evolution of the project and how Honeywell was selected. Honeywell and ECG presented details on the many measures and controls for the project and answered questions on the aspects of the self-funding. Finance Director Jim Finch also gave extensive input. After deliberation regarding self-funding of the project, there was a motion by Mr. Kaminsky, seconded by Mr. Shelton, to postpone the vote. The vote was 4 to 2 to postpone voting on the resolution until the next meeting; Mr. Cassella and Chairman Mooney voted no.

2. Finance Director Jim Finch provided an overview of the fiscal year 2017-2018 budget and its challenges, referencing the attached memo which was distributed to the Board outlining the uncertainties at the State level. Mr. Finch discussed the framework developed for making a decision about how we approached setting the mill rate, while insulating the taxpayer from the scenarios in Hartford. By working back to a mill rate that balances the State's uncertainty while not putting an undue burden on the taxpayer, the thinking was to allocate an additional \$3.6 million from fund balance--a total \$6.425 million from fund balance would be a way of insulating the tax payer to a 3.85% tax increase for a mill rate of 28.47. First Selectman Cosgrove gave closing remarks relating to our financial approach with confidence that rating agencies would continue to recognize our strategy as a fiscally prudent approach.

Chairman Mooney made a motion to approve \$6.425 million appropriation from fund balance, and a mill rate of 28.47. Mr. Valette made the motion, seconded by Ms. Young. The vote was unanimous.

After thanking the staff and Board, Chairman Mooney read the following resolution:

RESOLVED: That the Board of Finance establishes the mill rate for fiscal year 2017-2018 at 28.47 mills pursuant to revised revenue estimates coupled with the budget adopted by the Representative Town Meeting.

The resolution was moved by Mr. Shelton, seconded by Mr. Valette. There was no further discussion and the vote was unanimous.

3. Adjournment: Chairman Mooney requested to adjourn the meeting at 9:22 p.m. The motion was made by Mr. Cassella, seconded by Mr. Kaminsky. The vote was unanimous.

Dated this 23rd day of June, 2017



Lisa E. Arpin, Clerk
Board of Finance

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MAY 30 2017

OFFICE OF THE TREASURER
BRANFORD, CONNECTICUT

BRANFORD TOWN CLERK

1019 MAIN STREET
POST OFFICE BOX 150

May 30, 2017



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To: Joseph Mooney
Board of Finance

From: James P. Finch
Finance Director

Re: RTM Budget/Fund Balance Proposal

Background

As I wrote to you in March I underscored that the budget process for FY 2018 would be uniquely challenging as a result of the severe reductions in education grants coupled with a proposal to require municipalities to contribute to the Teachers Retirement Board (TRB). Additionally we noted the importance of planning for the worst case scenario and working with our state delegation and municipal advocacy groups to monitor the activities at the capitol so that we may make reasonable and informed decisions throughout our budget development. We had also hoped the Appropriations Committee and the State Finance Committee would provide insight as to the legislature's philosophy on municipal aid and local contributions to TRB.

As it relates to the TRB contributions we hear there is no support to pass the costs to municipalities, however, absent any financially feasible alternative and a growing state deficit it is hard to imagine a scenario in which the local funding of TRB in some form is not in our future.

Therefore as you contemplate setting the mill rate for next year it is perhaps disquieting that we acquired very little actionable information in the past sixty days and the reports out of the capitol continue to paint a bleak picture of our state's fiscal health. However, the purported labor savings if ratified provide a ray of optimism.

RTM Budget

Pursuant to the recommendations of the Board of Finance, the RTM resisted the temptation to offset the previously identified proposals from the capitol with crippling budget cuts. It has often been said that you can learn a lot about a person's values by how they spend their money and RTM showed they valued public education, infrastructure improvements and honoring our long term commitments to the pension and self-insurance funds. I have attached a worksheet outlining the changes. Perhaps the most significant adjustment was splitting the TRB contribution and debt service. The split will enable to us to reduce the amount of bond anticipation notes outstanding if we are

relieved from the proposed TRB requirement. Please note that many of the changes reflect the recently approved labor agreements for Parks and Town Hall Union employees.

The mill rate under the RTM's budget coupled with the Board of Finance's revenue estimates would increase the mill rate by 5.33% over the current year.

Governor's Proposal of May 15

As you may be aware, the Governor released a new proposal in response to falling revenues that effectively reduces all aid for public education and other reductions totaling \$2.1 million. If one adjusts the Board of Finance revenues pursuant to the Governor's proposal and applies the RTM expenditure requirements the mill rate would increase by 7.64% over the current year.

Options and Recommendation

As I stated at the last meeting predicting the state budget is a pointless exercise. Instead I prefer to be guided by a phrase attributed to Abraham Lincoln which is "The best way to predict your future is to create it". If you follow this guidance you would essentially consider and approve a tax increase that insulates the taxpayer from the worst of the proposals circulated at the capitol.

It is probably worth noting that the only tools available to the board at this stage are revenue adjustments, since we previously established that state revenues are uncertain and the other departmental revenue sources are not significant enough to provide meaningful mill rate relief. As a result we are left with adjusting the amount to draw from Branford's fund balance to offset tax requirements. I acknowledge that this is not an easy decision since we know having a healthy fund balance is important to external stakeholders including investors and rating agencies, while offering local stakeholders a path to tax stabilization and providing cash for capital projects that are approved and not financed.

Pursuant to our discussions with yourself and Jamie on Friday the consensus opinion was to account for the Governor's May 15 proposal and to use an additional \$3.6 million from fund balance. The result is a total drawdown of \$6,425,000 thereby reducing the mill rate increase to 3.85%. I believe this action will meet the Board's objective of insulating the taxpayer from continued uncertainty as the state budget plays out. I also discussed this with our financial advisor and he does not see an immediate concern since we are within fund balance parameters for similarly rated communities. Finally I should underscore that we have options available to reduce the drawdown throughout the year.

Therefore I respectfully submit for consideration a recommendation to use \$6,425,000 from fund balance and I attach a spreadsheet comparing the various mill rate scenarios.

TOWN OF BRANFORD
RTM Changes
2017/2018 Budget

Final

<u>Committee/Item</u>	<u>Department</u>	<u>BOF Proposed</u>	<u>Change</u>	<u>Revised</u>
Administrative Services				
Regular Wages & Salaries	Assessor's Office	270,124	9,336	279,460
Overtime	Assessor's Office	7,693	385	8,078
Regular Wages & Salaries	Tax Collector	169,452	4,878	174,330
Regular Wages & Salaries	Town Clerk	213,152	7,107	220,259
Expanded Hours	Town Clerk	200	10	210
Overtime	Human Resources	1,500	75	1,575
		0		0
Total			21,791	
Education				
James Blackstone Memorial Library	JBML	1,354,889	0	1,354,889
Misc. Equipment Repair	JBML	8,500	(8,500)	0
Capital (21st Century Tech & Dugouts/Press Box)	Board of Education	400,620	(43,000)	357,620
Board of Education	Board of Education	55,799,386		55,799,386
			(51,500)	
Public Services				
Regular Wages & Salaries	Municipal Buildings	243,003	6,065	249,068
Overtime	Municipal Buildings	38,000	1,900	39,900
Regular Wages & Salaries	Police Services	4,610,100	4,160	4,614,260
Capital - Police Cars	Police Services	121,552	(30,388)	91,164
Capital - Police Cars Related Equip & Setup	Police Services	58,212	(14,553)	43,659
Regular Wages & Salaries	Fire Services	2,602,638	2,547	2,605,185
Regular Wages & Salaries	Public Works	1,080,369	2,547	1,082,916
Regular Wages & Salaries	Solid Waste & Recycling	279,717	2,208	281,925
Regular Wages & Salaries	Engineering	261,982	7,797	269,779
Total			(17,717)	
Rules & Ordinances				
Regular Wages & Salaries	Planning & Zoning	274,845	2,229	277,074
Regular Wages & Salaries	Inland/Wetlands	119,068	2,547	121,615
Regular Wages & Salaries	Water Pollution Control	600,000	2,547	602,547
			7,323	
Ways & Means				
Regular Wages & Salaries	Fiscal Services	362,348	7,527	369,875
Regular Wages & Salaries	Recreation Department	412,999	12,399	425,398
Overtime	Recreation Department	24,295	1,215	25,510
Supplies	Public Celebration	2,800	(300)	2,500
Patriotic Observance	Public Celebration	6,350	300	6,650
Pensions & Contributions	Social Security	1,364,365	5,537	1,369,902
Pensions & Contributions	Retirement - Municipal Emp	1,868,699	8,498	1,877,197
Pensions & Contributions	Retirement - BOE TRB	2,747,784	(1,370,000)	1,377,784
Debt Service	Principal - General Purpose	4,147,000	1,010,000	5,157,000
Debt Service	Principal - Schools	780,000	360,000	1,140,000
Contingency	Contingency	1,270,937	(158,014)	1,112,923
			(122,838)	
	Total Committee Changes (1)		(162,941)	
Total Expenditure Changes Town		55,688,410	(119,941)	55,568,469
Total Expenditure Changes BOE (With Special Ed)		55,799,386	0	55,799,386
Total Expenditure Changes Cap & Leases		488,120	(43,000)	445,120
(1) Includes salary changes for Parks and Town Hall Union			(162,941)	

State Revenue Changes

General Fund Grants	BOF Recommended	Governor 5/15 Revised
Education Cost Sharing Grant	0	0
Special Education	1,514,029	0
Health & Welfare	6,700	6,700
Education Grants	1,520,729	
Circuit Breaker	195,000	0
Disability Exemptions	2,500	2,500
Elderly Freeze	5,000	5,000
Exempt Private Property	109,478	
Exempt State Property	38,695	
Vet's Reimbursement State	26,494	
School Transportation	0	
Mashantucket Pequot & Mohegan Grant	54,187	
Municipal Revenue Sharing	300,402	
	731,756	7,500
Misc State Grants	30,000	30,000
TRB Change		51,522
Total	2,282,485	89,022
Loss		(2,193,463)

Evolution of Branford Budget and Mill Rate FY 2018

Expenditures	Governor 2/8 Approved Requested Budget 2018	Governor 2/8 Approved BOF Budget 2018	Governor 2/8 Approved RTM Budget 2018	Governor 5/15 Approved RTM Budget 2018	Governor 5/15 Profroma BOF Budget 2018
Town	45,033,120	44,607,566	44,487,625	44,487,625	44,487,625
BOE	55,802,818	55,779,617	55,736,617	55,736,617	55,736,617
Teachers Pension	2,747,784	2,747,784	1,377,784	1,377,784	1,377,784
Debt Service	8,333,060	8,333,060	9,703,060	9,703,060	9,703,060
Special Education	507,889	507,889	507,889	507,889	507,889
Total Expenditures	112,424,671	111,975,916	111,812,975	111,812,975	111,812,975

Revenues	Budget 2017	Budget 2017	Budget 2017	Budget 2017	Budget 2017
Non Tax Revenue	9,369,024	9,469,024	9,469,024	9,469,024	9,469,024
Governor 5/15 Added F/B				(2,193,463)	(2,193,463)
F/B (Original)	2,825,000	2,825,000	2,825,000	2,825,000	2,825,000
Non Tax Revenue	12,194,024	12,294,024	12,294,024	10,100,561	13,700,561

Total Tax Requirements	100,230,647	99,681,892	99,518,951	101,712,414	98,112,414
Less State Reimbursements	270,800	270,800	270,800	270,800	270,800
Less Elderly Tax Relief	386,899	386,899	386,899	386,899	386,899
Less Allowance for Uncollectible	1,692,585	1,683,379	1,680,645	1,717,445	1,657,048
Total Tax Levy	102,580,931	102,022,970	101,857,295	104,087,558	100,427,161
Collection rate	0.98350	0.98350	0.98350	0.98350	0.98350
Grand List (estimated)	3,527,937,144	3,527,937,144	3,527,937,144	3,527,937,144	3,527,937,144
Mill Rate	29.08	28.92	28.87	29.50	28.47
PY Mill Rate	27.41	27.41	27.41	27.41	27.41
% Change from current year	6.08%	5.50%	5.33%	7.64%	3.85%

F/B Amount	2,825,000	2,825,000	2,825,000	2,825,000	6,425,000
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Town of Branford, CT ECM Cost / Savings Matrix

Building	ECM - 1: LED Lighting and Lighting Controls Upgrade	ECM - 2: Install Walk-In Freezer / Cooler Controllers	ECM - 3: Install De-Stratification Fans	ECM - 4: Roof Top Unit Replacement	ECM - 5: Building Management System Upgrades	ECM - 6: Building Envelope Improvements	ECM - 7: Pipe Insulation	ECM - 8: Steam Trap Replacement	ECM - 9: Desktop Computer Power Mangement	ECM - 10: Plug Load Power Management	ECM - 11: Water Conservation	ECM - 12: Water Treatment Plant Upgrades
Branford High School	X		X		X	X	X	X	X	X	X	
John B. Sliney Elementary School	X	X			X	X	X	X	X	X	X	
Mary R. Tisko Elementary School	X	X	X	X	X	X	X		X	X	X	
Mary T. Murphy Elementary School	X		X	X	X	X	X		X	X	X	
Indian Neck School	X			X	X	X	X	X		X	X	
Town Hall	X				X	X	X				X	
Fire Headquarters	X				X	X	X				X	
Police Station					X	X					X	
Animal Shelter	X				X	X					X	
Counseling Center	X				X	X	X				X	
Volunteer Service Center	X			X	X	X					X	
Orchard House (Adult Daycare)	X				X	X	X				X	
Kirkham Street	X				X	X	X				X	
VFW Building	X				X	X	X				X	
Willoughby Wallace Library					X	X	X				X	
Transfer Station	X				X	X	X				X	
Police Storage Garage	X				X	X					X	
Foote Memorial Park	X											
Water Pollution Control Facility	X				X	X	X					X
Blackstone Library	X					X						
Project Economics												
Total Cost	\$ 1,538,651	\$ 53,909	\$ 143,338	\$ 288,869	\$ 2,174,424	\$ 278,733	\$ 199,188	\$ 108,453	\$ 17,393	\$ 27,746	\$ 285,684	\$ 778,264
Total Energy and Operational Savings	\$ 2,225,670	\$ 73,912	\$ 71,974	\$ 139,810	\$ 1,249,532	\$ 209,435	\$ 167,024	\$ 71,852	\$ 83,619	\$ 101,115	\$ 285,310	\$ 1,669,047
PURA Qualifying Amounts	\$ 1,538,651	\$ 53,909	\$ 143,338	\$ 288,869	\$ 2,174,424	\$ -	\$ -	\$ -	\$ 17,393	\$ 27,746	\$ -	\$ 778,264

Total: \$ 5,894,652

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**BOARD OF FINANCE MEETING
DRAFT - SCOPE OF WORK**

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ECM 1: LED Lighting and Lighting Controls Upgrade

BRANFORD TOWN CLERK

School Buildings			
Branford HS	John B Sliney ES	Mary R Tisko ES	Indian Neck school
Mary T Murphy ES			
Town Buildings			
Town Hall	Fire HQ	Animal Shelter	Counselling Center
Volunteer Service Center	Orchard House (Adult Daycare)	Kirkham Street (VNA/Registrar/BCTV)	VFW Building
Foote Memorial Park	Transfer Station	WPCA Facility	Police Storage Garage
Blackstone Library			

As part of this project Honeywell is replacing / retrofitting **6,891** fixtures to LED.

Buildings	Exterior HID / CF / Incandescent to LED New Fixture	Exterior HID / CFL / Incandescent to LED Retrofit	Interior HID to LED New Fixture	Interior HID to LED Retrofit	Interior Incandescent / CFL to LED New Fixture	Interior Incandescent / CFL to LED Retrofit	Linear Fluorescent to LED Retrofit	Interior Linear Fluorescent / Incandescent / CF to LED New Fixture	Linear Fluorescent to Linear LED Retrofit
Administration Bldg	3	11				7			34
Animal Shelter	6	3							35
Branford High School		5	3	1		49			1856
Counseling Center	5	1				4		1	99
Fire Headquarters	25	28	2			54			359
Foote Park (Ball Fields Lighting)	13	2				12			36
Foote Park (Tennis Court Lighting)	20								
Garage	3								15
Indian Neck School						21			151
Indian Neck School Detached Building		7							26
John B. Sliney Elementary School		2				7			624
Kirkham Street (VNA/Registrar/BCTV)	2	3			1	11		3	50
Mary R. Tisko Elementary School		6				206			858
Mary T. Murphy Elementary School	4	8				227			872
Orchard House (Adult Daycare)	11	21				22		2	93
Police Storage Garage						2			47
Pre-Treatment Bldg	4					1			
Pump Bldg	4								15
Secondary Process	6		33						29
Sludge Holding	1		1						4
Small Garage	1								6
Solid Process Bldg	5		23			1			56
Town Hall	1	12				8	14	3	217
Transfer Station	19		1			2		18	15
Truck Loading	4								18
VFW Building		10				17			18
Volunteer Service Center	1	21				27			157
Blackstone Library						26			113
Total	138	140	63	1	1	704	14	27	5803

**BOARD OF FINANCE MEETING
DRAFT - SCOPE OF WORK**

ECM 2: Install Walk-In Freezer/Cooler Controllers

Building	Walk-In Coolers	Walk-In Freezers	Air Cooled/Water Cooled
Branford HS	1	1	Air Cooled
Mary R Tisko ES	1	1	Air Cooled
Mary T Murphy ES	1	1	Air Cooled

- 1) Install CoolTrol controls.
- 2) Replace existing shaded motors with high efficiency EC motors.
- 3) Dew point based control for door heaters.

ECM 3: Install De-Stratification Fans

Building	Location	Make & Model	Fan Count
Branford HS	New - Gymnasium	Air Pear 45	10
	Old - Gymnasium	Air Pear 45	6
Mary R Tisko ES	Gymnasium	Air Pear 45	3
Mary T Murphy ES	Gymnasium	Air Pear 45	3

- 1) Install Air Pear ceiling mounted fans.

ECM 4: Replace Roof Top Units

Building	PROPOSED					
	Equipment	Make	Model	QTY	Type	Capacity - CFM
Mary R Tisko ES	RTU-2	Daikin	DGC – 7.5 Ton	1	Gas Fired w/ DX Cooling	3,200
	RTU-3	Daikin	DCC – 3.0 Ton	1	DX Cooling Only	1,200
Mary T Murphy ES	RTU-1, 2	Daikin	DGC – 7.5 Ton	2	Gas Fired w/ DX Cooling	3,200
	RTU-3	Daikin	DCC – 3.0 Ton	1	DX Cooling Only	1,200
Volunteer Service Center	RTU-1	Lennox	LGH036H4E	1	Gas Fired w/ DX Cooling	3 Ton
	RTU-2	Lennox	LGH072H4B	1	Gas Fired w/ DX Cooling	6 Ton
	RTU-3	Lennox	LGH048H4E	1	Gas Fired w/ DX Cooling	4 Ton
	RTU-4	Lennox	LGH060H4E	1	Gas Fired w/ DX Cooling	5 Ton

- 1) Remove and dispose of existing units

**BOARD OF FINANCE MEETING
DRAFT - SCOPE OF WORK**

- 2) Furnish and install new RTUs per table above.

ECM 5: Building Management System Upgrades

Branford HS

- 1) Complete replacement of the existing BMS, including a new Tridium-based global controller, new front-end workstation, new graphics, alarms, and trending.
- 2) New DDC for all of the pneumatic equipment in the steam section, including new DDC valves and end-devices. None of the pneumatics will remain operational.
- 3) New OA dampers will be installed, as needed, for 31 ceiling-mounted unit vents.
- 4) Existing DDC hot water and chilled water valves will be reused and are assumed to be operational.
- 5) 101 new hot water valves will be provided and installed on the UVs and FCUs

John B. Sliney Elementary School

- 1) Complete replacement of the existing BMS, including a new Tridium-based global controller, new graphics, alarms, and trending.
- 2) New boiler plant controls, 6 EFs, and control of the 3 existing DDC steam zone valves.
- 3) Provide and install 10 new TRVs to replace failed existing TRVs.
- 4) Provide and install 6 new DDC space sensors to provide better temperature monitoring and night setback capabilities.
- 5) Provide room level DDC control by installing 83 new DDC valves and 68 space sensors under the 18 year term.
- 6) Provide and install DDC control on the 2 UHs serving the gym.
- 7) Provide and install DDC control on the existing H&V unit serving the cafeteria.

Mary R. Tisko Elementary School

- 1) Complete replacement of the existing BMS, including a new Tridium-based global controller, new graphics, alarms, and trending.
- 2) Provide new boiler plant controls and DDC control of 3 EFs.
- 3) Provide and install new DDC to replace the outdated Trane controls on the 9 existing H&V units serving the classrooms. Includes new DDC damper actuators and new DDC valves.
- 4) Provide and install 3 new BACnet thermostats to control the existing RTUs.
- 5) Provide room level DDC control by installing DDC control of the 31 existing reheat valves, 26 new DDC perimeter radiation valves, and 31 DDC space sensors

Mary T. Murphy Elementary School

- 1) Complete replacement of the existing BMS, including a new Tridium-based global controller, new graphics, alarms, and trending.
- 2) Provide new boiler plant controls and DDC control of 3 EFs.
- 3) Provide and install new DDC to replace the outdated Trane controls on the 9 existing H&V units serving the classrooms. Includes new DDC damper actuators and new DDC valves.
- 4) Provide and install 3 new BACnet thermostats to control the existing RTUs.
- 5) Provide room level DDC control by installing DDC control of the 31 existing reheat valves, 26 new DDC perimeter radiation valves, and 31 DDC space sensors

Indian Neck Elementary School

- 1) Complete replacement of the existing BMS, including a new Tridium-based global controller, new graphics, alarms, and trending.
- 2) Provide new boiler plant controls and control of the 3 existing DDC steam zone valves.
- 3) Provide and install 5 new TRVs to replace failed existing TRVs.
- 4) Provide room level DDC control by installing 40 new DDC valves and 20 space sensors
- 5) Provide and install DDC control of 7 A/C units located in the classrooms.

**BOARD OF FINANCE MEETING
DRAFT - SCOPE OF WORK**

Town Buildings

- 1) Provide and install Wi-Fi communicating thermostats to replace the existing thermostats to provide remote monitoring, scheduling, and setpoint adjustment from a standard web browser or smart phone. The following town buildings will be provided with new Wi-Fi thermostats:

Town Buildings			
Wallace Library	Police Station	Animal Shelter	Counselling Center
Volunteer Service Center	Orchard House (Adult Daycare)	Kirkham Street (VNA/Registrar/BCTV)	VFW Building
Police Storage Garage		Transfer Station	

- 2) Provide and install a new ACM global controller in the Town Hall to upgrade the existing BCM Web controller.
- 3) The fire department headquarter controls will remain as a stand-alone DDC system. Remote heat pump units will be control added.
- 4) Provide and install new DDC control in the administration building and the solids processing building in the Water Pollution Control Facility.

Demand Control Ventilation

Building	Proposed			
	Equipment	Serves	QTY	Install VFD Y/N
Branford HS	RTU-1	Administration - VAVs	1	N
	AHU-1	Auditorium	1	Y
	HV-1,2	Main Gymnasium	2	Y
	HV-9	Visual Gallery	1	N
	HV	Old Gymnasium	4	N
Mary R Tisko ES	HV-9	Gymnasium	1	N
Mary T Murphy ES	HV-9	Gymnasium	1	N

- 1) Furnish and install CO₂ sensors in the spaces identified in the table above.
- 2) Provide one (1) CO₂ sensor to record outdoor air CO₂ levels at each location.
- 3) Outdoor air damper in the air handling and roof top units will be modulated based on the CO₂ levels in the space as indexed to the outdoor air CO₂.
- 4) Testing and commissioning.

RTU Optimization Control

- 1) Install CATALYST controller for RTU optimization for the Branford HS cafeteria / student center McQUAY RTUs.
- 2) Includes required components for fan, economizer, and demand control ventilation.

**BOARD OF FINANCE MEETING
DRAFT - SCOPE OF WORK**

ECM 6: Building Envelope Improvements

School Buildings			
Branford HS	John B Sliney ES	Mary R Tisko ES	Indian Neck school
Mary T Murphy ES			
Town Buildings			
Town Hall	Fire HQ	Police Station	Animal Shelter
Counselling Center	Volunteer Service Center	Orchard House (Adult Daycare)	Kirkham Street (VNA/Registrar/BCTV)
VFW Building	Willoughby Wallace Library	Transfer Station	WPCA Facility
Police Storage Garage		Blackstone Library	

Building Name	Door Weather Strip (Double)	Door Weather Strip (Single)	Door Weather Strip (Garage)	Roof Wall Joint (LF)	Energy Wall (Sf Ft)	Building Penetration (LF)	Attic Insulation (SQ. FT)	Ceiling Insulation (SQ. FT)
Branford HS	25	18	4	1,543	434	-	-	
John B. Sliney ES	7	6	1	-	-	-	-	
Mary R. Tisko ES	7	20	1	-	-	80	-	
Mary T. Murphy ES	7	20	1	-	-	80	-	
Indian Neck School	4	3	-	-	-	42	-	
Town Hall	-	5	-	275	-	2	-	
Fire Headquarter	2	14	10	820	-	40	-	
Police Department	2	6	-	-	-	-	-	
Animal Shelter	-	8	-	-	-	-	100	
Counseling Center	4	-	-	-	-	-	-	
Volunteer Service Center	1	7	-	-	-	36	-	
Orchard House Adult Daycare	1	3	-	-	-	13	-	
Kirkham Street	-	3	-	-	-	17	-	-
VFW Building	1	1	-	-	-	60	3,680	220
Willoughby Wallace Library	2	1	-	-	-	67	-	-
Transfer Station	-	3	-	-	-	-	-	-
Police Storage Garage	-	2	1	278	-	-	-	-
WWTP – 2 Bay Garage	-	1	2	-	-	-	-	576
WWTP – Garage	1	2	4	127	-	-	-	-
WWTP – Secondary Process Building	2	2	-	200	-	-	-	-
WWTP - Administration	-	3	-	-	-	-	-	-
WWTP – Pre-Treatment Building	-	2	1	126	-	-	-	-
WWTP – Pump Building	1	2	-	165	-	-	-	-
WWTP – Solid Processing Building	-	3	2	-	-	-	-	-
Blackstone Library	2	6	-	-	9	2	-	-
Total	69	141	27	3,534	443	439	3,780	796

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ECM 7: Install Pipe Insulation

Total of heating hot water, domestic hot water, steam, & condensate effective linear feet of pipe insulation = **2,959.9**

Building	Linear Feet of Pipe [ft] per pipe size [in]												
	14"+ Diameter	10" Diameter	8" Diameter	6" Diameter	5" Diameter	4" Diameter	3" Diameter	2.5" Diameter	2" Diameter	1.5" Diameter	1" Diameter	0.75" Diameter	0.5" Diameter
Branford High Schol													
Heating Hot Water	5.0		2.8	33.8		14.2	7.2			2.1	5.0	2.7	42.2
Domestic Hot Water									33.8	4.2	2.4	4.0	
Steam Piping	9.9	3.0	8.1	1.2		7.9		2.0	19.9	2.6	30.7	11.8	
Condensate Piping								4.0	45.0		19.5		54.8
Total	14.9	3.0	10.9	35.0	0.0	22.1	7.2	6.0	98.7	8.9	57.6	18.5	97.0
John B. Sliney Elementary School													
Domestic Hot Water			4.5	10.6	32.6	46.0	34.2		6.0		20.4	11.7	
Steam Piping	66.4					10.4	3.4	39.4	10.5	138.9	175.0	91.6	23.8
Condensate Piping													
Total	66.4	0.0	4.5	10.6	32.6	56.4	37.6	39.4	16.5	138.9	195.4	103.3	23.8
Mary R. Tisko Elementary School													
Heating Hot Water	11.2			1.0				51.9		2.0	1.1	13.4	0.8
Domestic Hot Water								2.2				10.9	3.1
Total	11.2	0.0	0.0	1.0	0.0	0.0	0.0	54.1	0.0	2.0	1.1	24.3	3.9
Mary T. Murphy Elementary School													
Heating Hot Water	4.9					4.1	43.4	2.2	14.7	1.0	4.1	18.0	5.6
Domestic Hot Water									1.6		11.0	2.4	
Steam Piping													
Condensate Piping													
Total	4.9	0.0	0.0	0.0	0.0	4.1	43.4	2.2	16.3	1.0	15.1	20.4	5.6
Indian Neck School													
Domestic Hot Water										1.9	4.3	5.3	48.0
Steam Piping		4.8	9.9	1.5				19.0	3.4	22.8	21.6	11.3	
Condensate Piping	25.1							4.6		72.8	2.6	179.3	53.2
Total	25.1	4.8	9.9	1.5	0.0	0.0	0.0	23.6	3.4	95.6	4.5	205.2	69.8
Town Hall													
Heating Hot Water								4.4	23.0	17.9	15.6	5.8	4.8
Domestic Hot Water												3.9	10.7
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	23.0	17.9	15.6	9.7	15.5
Fire Headquarters													
Heating Hot Water									13.8	24.6	39.2	5.0	27.2
Domestic Hot Water									0.4	0.9	2.9	3.9	2.0
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.2	25.5	42.1	8.9	29.2
Counseling Center													
Domestic Hot Water													10.7
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.7
Orchard House (Adult Daycare)													
Heating Hot Water	5.5	7.2	11.4				6.0	43.0	22.2	18.4	28.7	12.6	
Domestic Hot Water												9.3	16.4
Total	5.5	7.2	11.4	0.0	0.0	0.0	6.0	43.0	22.2	18.4	28.7	21.9	16.4
Kirkham Building													
Heating Hot Water						1.8			12.8	20.1	52.4	47.9	
Domestic Hot Water												68.0	39.1
Total	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	12.8	20.1	52.4	115.9	39.1
VFW Building													
Heating Hot Water													236.8
Domestic Hot Water												32.8	33.6
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.8	270.4
Willoughby Wallace Library													
Heating Hot Water										7.9	65.1		
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	65.1	0.0	0.0
Transfer Station													
Heating Hot Water											3.4		
Domestic Hot Water												21.7	8.8
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	21.7	8.8
WPCA													
Heating Hot Water		5.5						1.5	10.0	1.3	4.9	1.9	
Domestic Hot Water													
Total	0.0	5.5	0.0	0.0	0.0	0.0	0.0	1.5	10.0	1.3	4.9	1.9	0.0

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ECM 8: Steam Traps Retrofit

Building #	1/2"	3/4"	1	1 1/4"	2"
	Thermo-static	Mechanical Trap (FT-B-TD)	Mechanical Trap (FT-B-TD)	Mechanical Trap (FT)	Mechanical Trap (FT)
Branford High School	0	3	6	0	2
Indian Neck School	47	0	6	1	0
John B. Sliney Elementary	107	8	5	0	0
Totals	154	11	17	1	2

Bldg.	TRV
Branford HS	11
Indian Neck ES	54
John B. Sliney ES	120
Total	185

ECM 9: Desktop Computer Power Management

- 1) Furnish Four Hundred and Eighty Three (483) computer licenses for Verdiem (or equal) software, or equivalent.
- 2) Honeywell shall provide a price for any additional licenses at the request of the customer.
- 3) Honeywell will work with the District and Verdiem (or equal) to provide technical assistance to expedite the installation of the new software. The District shall install the software and push it down to the end-user machines.
- 4) Maintenance, including full remote technical support and product upgrades for one (1) year on Verdiem software. District to work directly with Verdiem (or equal software firm) on any on-going support, maintenance issues, or software upgrade during this period.
- 5) No network device hardware or upgrades are included.

ECM 10: Install Plug Load Controllers

- 1) Customer shall provide an accessible Wi-Fi network configuration for the plug load controllers
- 2) Honeywell shall install 163 (One Hundred Sixty Three) BERT, or equivalent Wi-Fi programmable timers at Branford HS, John B. Sliney ES, Mary T. Murphy ES, Mary R. Tisko ES, and Indian Neck School and configure on network.
- 3) Honeywell will provide technical assistance to expedite the installation of the new software.

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ECM 11: Water Conservation

Replace (232) Toilets, (49) Urinal flush valves, (306) Faucet restrictors, and (6) Showerheads.

Water Index by Building	Toilets	Urinals	Faucet	Showers
Branford High School	73	0	110	0
John B. Sliney ES	48	14	33	0
Mary R. Tisko ES	23	11	42	0
Mary T. Murphy ES	34	11	46	0
Indian Neck School	12	4	19	0
Town Hall	7	1	6	0
Fire Headquarters	1	2	11	2
Police Station	9	3	11	3
Animal Shelter	1	0	1	0
Counseling Center	4	0	3	0
Volunteer Service Center	4	0	8	0
Orchard House	12	3	6	1
Kirkham St. (VNA/Registrar/BCTV)	0	0	2	0
VFW Building	3	0	3	0
Willoughby Wallace Library	0	0	3	0
Transfer Station	0	0	1	0
Police Storage Garage	1	0	1	0
TOTAL	232	49	306	6

ECM 12: Waste Water Treatment Plant Upgrades

ECM 12-1: Odor Control System Exhaust Fan Control

Revise control of the exhaust fan through the System Control and Data Acquisition System (SCADA) to operate at low speed when the WWTP is experiencing low flows, and during the winter months when outside air temperatures are below 50 deg F.

Savings will result from operating the odor control system exhaust fan at low speed.

Implementation of this ECM was discussed WWTP management who concurred this ECM can be implemented without adversely effecting WWTP operations.

Scope of Work

1. Modify controls of the odor control system exhaust fan through the SCADA to provide for automatic reset of exhaust fan speed as a function of WWTP flow and outside air temperature.
2. Test and commission.

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ECM 12-2: Cycle Sludge Blowers at Night

Modify the control of the sludge blowers through the SCADA to provide for cycling off for 45 minute and on for 15 minutes per hour during periods when the GBT is not in use.

Implementation of this ECM was discussed WWTP management who concurred this ECM can be implemented without adversely effecting WWTP operations.

Scope of Work

1. Modify controls for blower VFDs through the SCADA to allow for blower cycling on a preset schedule during periods when the GBT is not in use.
2. Test and commission.

ECM 12-3: Secure One (1) Grit Train

Secure one (1) grit channel and operate the plant on one (1) channel at all times except during periods of high flow. The changeover will be accomplished manually on a predetermined schedule to equalize run time on the two (2) channels. Verification of the implementation of this ECM can be accomplished through the trend logs in the SCADA recording which Grit Train and associated equipment is in operation.

Honeywell further proposes to modify the grit blower controls through the SCADA to provide for operation on a 30 minute on/off cycle.

Implementation of this ECM was discussed WWTP management who concurred this ECM can be implemented without adversely effecting WWTP operations.

Scope of Work

1. Modify grit blower controls through the SCADA to provide for cycling on a fixed schedule.
2. Establish trend logs for Grit Train and associated equipment operation in the SCADA.
3. Test and Commission.

ECM 12-4: Replace Re-Aeration Blower

Replace one (1) of the existing positive displacement blowers serving the reaeration zone with a new, higher efficiency blower. The other positive displacement blowers will stay for the N+1 arrangement. It is assumed for this response the new blower will fit within the same general foot print as the blower being removed. The old blower can be saved as spare parts for the backup Robuschi blower left in place.

For improved control Honeywell proposes the addition of one (1) HACH LDO dissolved oxygen probe that could be tied into a new Hach SC200 controller for the other DO probe for the Aeration Basin. This would leave space for one (1) more sensor to be added at a later date if needed for additional control. This DO probe would be tied into the SCADA to control the new blower based on the DO in the basin. The set point for the basin would be 1.0 mg/L or less adjusted as needed based on plant operating requirements for polishing the effluent.

Implementation of this ECM was discussed WWTP management who concurred this ECM can be implemented without adversely effecting WWTP operations.

Scope of Work

1. Remove one (1) PD blower. Turn removed blower over to the WWTP. Move removed blower to storage location designated by the WWTP.
2. Furnish new blower.
3. Modify housekeeping pad as required for new blower.
4. Rigging and setting in place the above described new equipment.
5. Furnish and install new air distribution piping and manual isolation valves as required to connect new blower to existing air distribution piping.
6. Existing VFD to be reused with the new blower. Extend power wiring to new blower.

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7. Furnish and install new DO sensor and controller at a location in the Reaeration Basin agreed to with WWTP operations.
8. Furnish necessary attachments and supports to locate new DO sensor in the Basin and providing for easy removal of sensor for maintenance.
9. Run new twisted pair from sensor/controller to the SCADA panel in Secondary Treatment building. Use existing spare input at SCADA or provide new card as required.
10. Provide programming for control of new and existing reaeration blower VFDs based upon DO value from new sensor. Set point to be as agreed upon with WWTP operations.
11. Update SCADA screens to reflect new installation and blower operation. Program trend logs of DO, blower run time (2 points), and VFD frequency output (2 points).
12. Provide schematics of installation, sequences of operation, and operating and maintenance manuals for the new equipment and systems.
13. Test and commission.

ECM 12-5: Service Water Skid Re-commissioning (*Subject to Honeywell final IGA review*)

Replace the expansion tank with a new unit of similar capacity and re-commission the pump skid. The recommissioning effort will identify any defective control devices and Plant staff will be advised. Once the expansion tank and skid controls are replaced and refurbished, the pumps will cycle as intended at the design operating pressure.

Scope of Work

1. Furnish and install new bladder type expansion tank.
2. Re-commission controls.
3. Test and commission.

ECM 12-6: Replace Primary Aeration Blower

Replace one (1) of the existing PD primary aeration blowers with a high efficiency, high speed turbo blower. The remaining two (2) positive displacement blowers will remain. Review of data provided by one (1) of the potential suppliers indicates the new blower will fit within the same general foot print as the blower being removed. Piping changes will be required to realign the intake and discharge connections. Honeywell performed an analysis based on blower data and the plant flows/loads from trend logs in the SCADA system, and basin dimensions from the design drawings. It was determined that with the current configuration the plant should be able to reduce the amount of air being provided to the basins and get the same results. There are several assumptions made for this analysis:

- 1) The 9-inch disc diffusers are in good shape with no significant degradation in bubble size and performance.
- 2) The Landia mixers in the basins are operating properly and keeping the basins well agitated to maintain proper mixing since the basins are mixing limited.
- 3) The plant should be able to maintain 1.0 mg/L residual DO or less with new sensors and multi-layer blower control.
- 4) BOD levels and plant flows stay within the same general range as the plant currently operates.

With additional control on the basins by using a different or multiple parameters such as a direct BOD measurement, ORP or nitrate levels the plant should be able to operate the plant with one (1) blower to provide aeration the majority of the time. This ability to operate only a single blower during most scenarios should also save additional energy that has not currently been accounted for due to the lack of available data for how often the second blower runs over a long term and under what conditions.

Scope of Work

1. Remove and turn over to the WWTP one (1) of the existing blowers. Move blower to a storage location identified by the WWTP.
2. Furnish new turbo blower.

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3. Modify housekeeping pad as required for installation of new blower.
4. Reuse existing electric service for the new blower.
5. Remove existing drive for removed blower and use cabinet as junction box. New blower has integral VFD.
6. Furnish and install new power wiring and extend existing control wiring to the new blower.
7. Rigging and setting in place the above described new equipment.
8. Furnish and install new air distribution piping and manual isolation valves as required to connect new blower to existing air distribution piping.
9. Provide programming for control of new aeration blower VFD. Set point to be as agreed upon with WWTP operations. Existing DO sensors to be reused with upgraded installation.
10. Update SCADA screens to reflect new installation and blower operation.
11. Establish trend logs for Reaeration Basin DO (2 points), blower run time (3 points), and VFD output (3 points)
12. Provide schematics of installation, sequences of operation, and operating and maintenance manuals for the new equipment and systems.
13. Test and commission.

ECM 12-7: Upgrade UV Disinfection System

Replace the existing UV lamps with more efficient Pro-Series lamps capable of being dimmed to a lower output rating, upgrading the UV control system, and allowing the UVT sensor into the upgraded controls to provide for automatic dimming of the UV lamps.

Upgrading of the control system with a new Panelview HMI and SLC series PLC will also allow much more information to be shared with the plant SCADA as currently very little information can be relayed to the SCADA because of the limitations of the old PLC. According to Trojan, the new PLC should allow sharing of information either via Ethernet or a possible translator card to make the data available to the plant SCADA.

The upgrade on the UV system dimming will allow the new upgrade to dim new Pro-series lamps from 53% maximum dimming to 30% of peak output which will allow for further power savings over the life of the system.

The controls upgrade will also allow the option of limited control for turning on or switching to the second bank remotely without the plant staff having to physically be at the UV system HMI.

Implementation of this ECM was discussed WWTP management who concurred this ECM can be implemented without adversely effecting WWTP operations.

Scope of Work

1. Replace UV lamps with more efficient Pro-Series units with 12,000 End of Lamp Life (EOLL) hours.
2. Upgrade UV control system as required to operate the new lamps and provide additional dimming capability.
3. Integrate existing Hach UVT sensor into upgraded control system.
4. Develop sequence of operation for automatic control of lamp output based upon flow and transmittance.
5. Integrate SCADA system with new data from Trojan UV system.
6. Test and commission.