

Hanover Advisory Committee
550 Hanover Street
Hanover, MA 02339
Meeting Minutes
Tuesday, November 15, 2016 – 7:00 pm

Opening:

The meeting was opened at 7:00 p.m. by Emmanuel Dockter, Vice Chairman.

Committee Attendees:

Emmanuel Dockter
Angela Blanchard
Joan Port-Farwell
Sandra Hayes
Jerry O'Hearn
Brandon Freeman

Absent

Edward Hickey
Wayne Moores
Gavin Little-Gill

Other Attendees:

Janine Smith, Hanover Director of Municipal Finance
Peter Frazier, Managing Director-FirstSouthwest
Abby Jeffers, Vice President-FirstSouthwest
Peter Matchak, Hanover Town Planner

Review of Meeting Minutes

Angela Blanchard made a motion to accept the minutes from November 2, 2016 as written. This was seconded by Joan Port Farwell. All were in favor and the motion passed.

Presentation by FirstSouthwest

Peter Frazier from FirstSouthwest presented a PowerPoint to the Committee entitled "Borrowing Process Overview" (***see attached***). It explained the process the Town of Hanover must go through to secure bond loans for capital project. It highlighted many important parts of the process including determining the capital project required, getting approval at town meeting, determining the term of bonds, the bond rating assigned, the sale of the bonds, the proceeds being credited to the Town and the Town's repayment of principal and interest on schedule. Emmanuel Dockter inquired whether the Town sometimes uses taxable bonds. Peter Frazier replied yes, sometimes if a portion of the project does not qualify for tax-exempt bonds. Peter Frazier discussed the Town of Hanover's Aa2 bond rating from Moody's Investor Service. Emmanuel Dockter asked are there Massachusetts Towns rated Aaa, this being the highest rating. Peter Frazier replied yes, around fourteen towns within Massachusetts have the highest rating. Emmanuel Dockter asked if the Town of Hanover is only re-rated when a bond is issued. Peter Frazier replied no, the Town's rating is review annually.

Abby Jeffers presented and explained various documents to the Committee (***see attached***). These included the Town of Hanover's current Moody's Investors Service rating report, a tracking spreadsheet of Authorized Unissued Debt, a tracking spreadsheet of actual debt service, three charts projecting debt

service, and a spreadsheet for the Center/Sylvester School Project estimated project costs. Emmanuel Dockter asked how the borrowing required for the Center/Sylvester School Project would affect the Town's bond rating. Abby Jeffers stated that it should be looked at in a positive light since the project was planned for in advanced. Janine Smith stated that the Town keeps bond counsel and Moody's Investor Service informed of all upcoming capital projects. Emmanuel Dockter asked how the Town's free cash balance affects the bond rating. Abby Jeffers stated that having enough free cash is positive for the Town's bond rating and is considered reserve funds. Peter Frazier agreed and also stated that stabilization funds are also very positive for bond ratings. Emmanuel Dockter inquired if a certain percentage of reserves are ideal for bond ratings. Peter Frazier stated that around 5% would be a general guideline. The Committee thanked Mrs. Jeffers and Mr. Frazier for their time, and they departed at 8:14 pm.

Discussion with Peter Matchak, Hanover Town Planner

Peter Matchak discussed with the Committee the five Community Preservation Committee (CPC) applications that are currently expected. These are just draft applications and have not been reviewed or accepted by the CPC. The five applications include an outdoor hockey rink, phase two of the Town Hall repairs, the Veteran's Memorial, a new Hanover Historical Commission plan and a playground at Forge Pond Park. Mr. Matchak discussed with the Committee past CPC approved projects which are not completed and have not expended all the funds granted. These included a rail trail project, a document preservation project and new windows at the First Congregational Church. The rail trail funds are no longer needed and should be used for another purpose. The status of the document preservation project will be sought from Hanover Town Clerk Cathy Harder-Bernier. Peter Matchak summarized an email from Jack Shea regarding the First Congregational Church windows. The project has required special detail but is moving forward. Final project estimates came back high and some fundraising has been required. An unexpected roof repair expense also has delayed the start of the window replacement project. Peter Matchak stated that he would suggest the CPC include language in future warrant articles to impose a deadline on completion of projects. Janine Smith stated that unexpended funds can be repurposed to pay for other warrant articles. A brief discussion was had regarding the proposed new color of the Town Hall as well as a discussion regarding the possibility of reducing the percentage of the CPC tax.

Next Meetings

The Committee's next meeting will be on Wednesday, November 30th at 7 pm.

Adjournment

Angela Blanchard made a motion to adjourn. This was seconded by Jerry O'Hearn. All were in favor, and the meeting adjourned at 9:00 pm.

Hanover, Massachusetts



Borrowing Process Overview

November 15, 2016

Peter Frazier, Managing Director

Abby Jeffers, Vice President



Bonds and Notes

- An interest bearing promise to pay a sum of money on a specific date
- Bonds—maturity greater than one year
- Notes—maturity one year or less
- Typically sold in \$1,000 or \$5,000 denominations

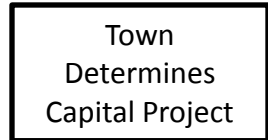
Types of Bonds and Notes

- Differentiated by
 - Source of repayment
 - Underlying security

Types of Notes

- Bond Anticipation Notes
- State Aid Anticipation Notes
- Federal Aid Anticipation Notes
- Revenue or Tax Anticipation Notes

Municipal Borrowing Flow Chart



- ◆ Project Identified
- ◆ Preliminary Modeling
 - ◆ Tax Impact
 - ◆ Rate Impact

Massachusetts General Laws

- Chapter 44
- Chapter 208, Acts of 2004 – New 70B (MSBA)
- Special Acts

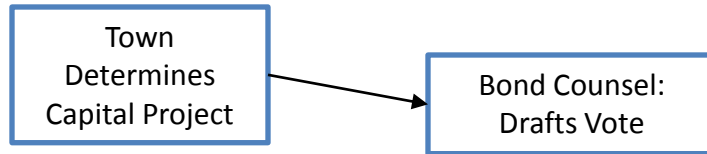
- Determine allowable borrowing purposes
- Determine maximum borrowing term
- Determine repayment structure – **All projects can be issued on a level debt basis**
 - Level Principal Retirement
 - Level Debt Service

Level Debt vs. Level Principal Structures

Total Debt Service Comparison \$10,000,000 General Obligation Bonds

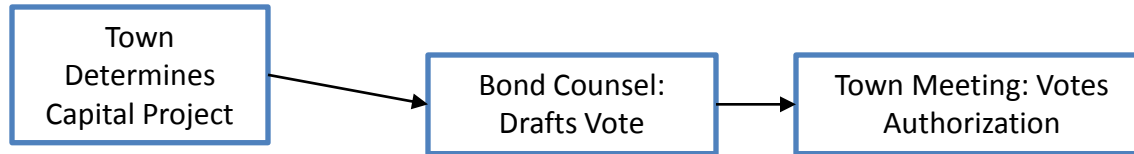
Years	10 Year Bonds		20 Year Bonds		
	Equal Principal	Level Debt	Equal Principal	Level Debt	
1	\$1,322,200	\$1,221,424	\$912,500	\$786,710	A
2	1,309,300	1,219,943	906,050	787,195	
3	1,291,200	1,218,653	897,000	790,770	
4	1,268,000	1,222,425	885,400	787,302	
5	1,239,800	1,220,917	871,300	786,868	
6	1,207,900	1,220,133	855,350	789,746	
7	1,171,900	1,219,313	837,350	790,526	
8	1,132,100	1,223,319	817,450	789,208	
9	1,089,700	1,222,739	796,250	786,188	
10	1,045,500	1,223,235	774,150	786,740	
11			751,400	790,810	
12			728,050	788,160	
13			704,200	789,072	
14			679,900	788,314	
15			655,200	790,897	
16			630,050	786,471	
17			604,500	790,300	
18			578,600	786,889	
19			552,500	786,654	
20			526,300	789,450	
	\$12,077,600	\$12,212,099	\$14,963,500	\$15,768,264	B

Municipal Borrowing Flow Chart



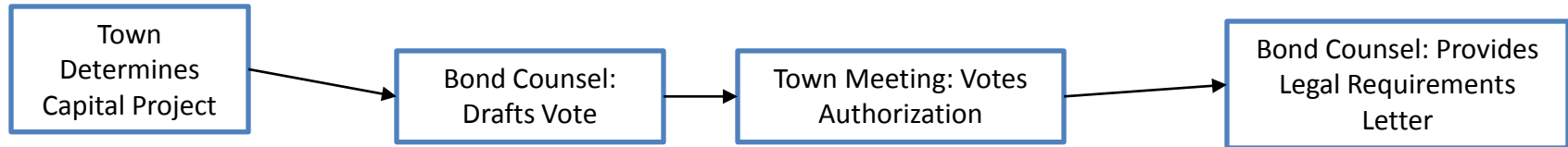
- ◆ Important!
- ◆ Bond Counsel should draft or review town meeting articles and votes

Municipal Borrowing Flow Chart



- **Borrowing Authorization requires 2/3 majority**
- **Debt Exclusion requires majority vote at regular or special town election**

Municipal Borrowing Flow Chart



- **Bond Counsel provides opinion on:**
 - **Validity of borrowing**
 - **Tax Exemption**

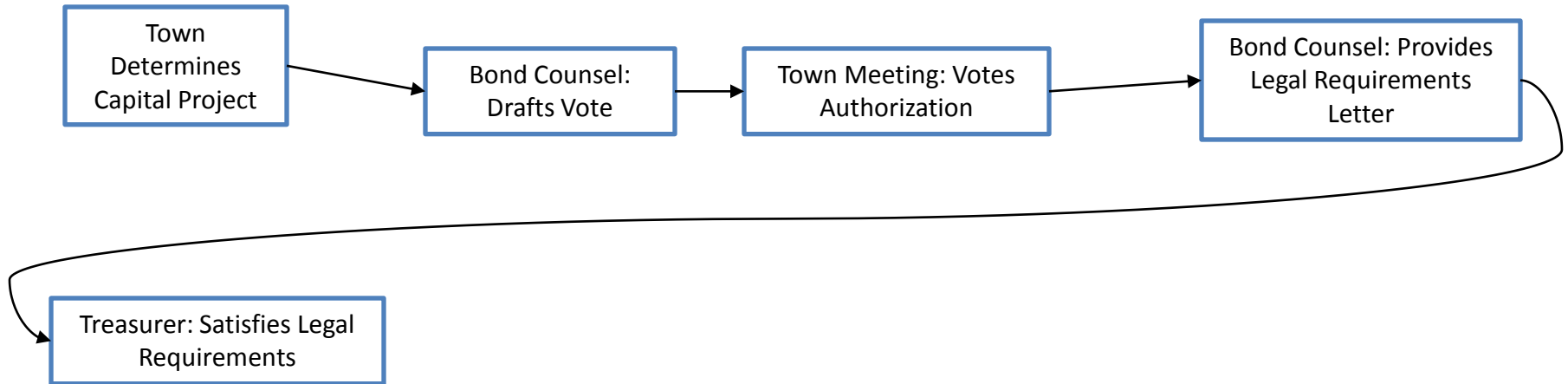
Tax-Exemption Example

<u>Security</u>	<u>Principal</u>	<u>Interest Rate</u>	<u>Interest</u>	<u>Tax Rate</u>	<u>Tax Bill</u>	<u>Interest After Taxes</u>	<u>After-Tax Yield</u>
Taxable Bond	\$ 1,000	7.00%	\$70	32%	\$ 22	\$48	4.76%
Tax-Exempt Bond	\$ 1,000	5.00%	\$50	32%	\$ -	\$50	5%

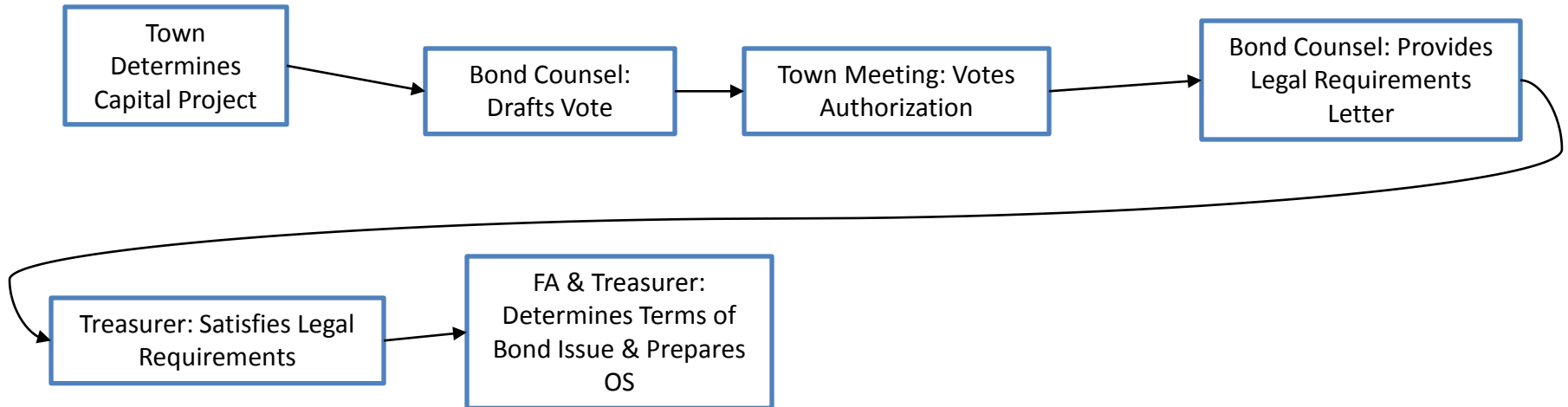
Arbitrage

- Difference Between Tax-Exempt Borrowing Rate and Investment Rate
- Profit must be rebated to the Federal Government
- Exceptions
 - “Small Issuer” (less than \$5 million issued per calendar year)
 - “Six Month Expenditure”
 - “18 Month Expenditure”
 - “Two-Year Construction”

Municipal Borrowing Flow Chart



Municipal Borrowing Flow Chart



To borrow short or long term?

- Interest rate environment
- Size of project
- Spending schedule
- Budget constraints

Borrowing Alternatives

- Massachusetts Clean Water Trust
(Formerly Massachusetts Water Pollution Abatement Trust)
- Massachusetts Water Resources Authority
- State House Loan Notes
- Rural Development Loans
- State Qualified Bond Act

Municipal Disclosure

- History

- 1929: Stock Market Crash
- 1933-34: Securities Act of 1933

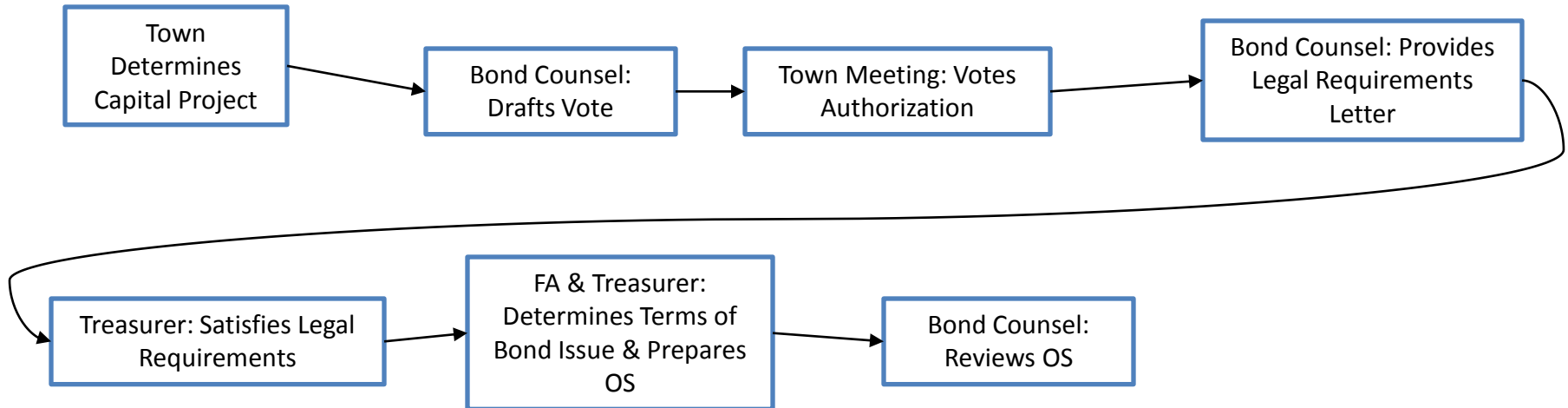
The Securities Exchange Act of 1934

- 1975: New York City Defaults
- 1980's: Washington Public Power Supply System Defaults
- 1989: SEC Rule 15(c) 2-12 – Primary Disclosure
- 1994: New SEC Rule 15(c) 2-12 – Continuing Disclosure
- 2009: Amendments to Rule 15(c) 2-12 - Annual Disclosure for all

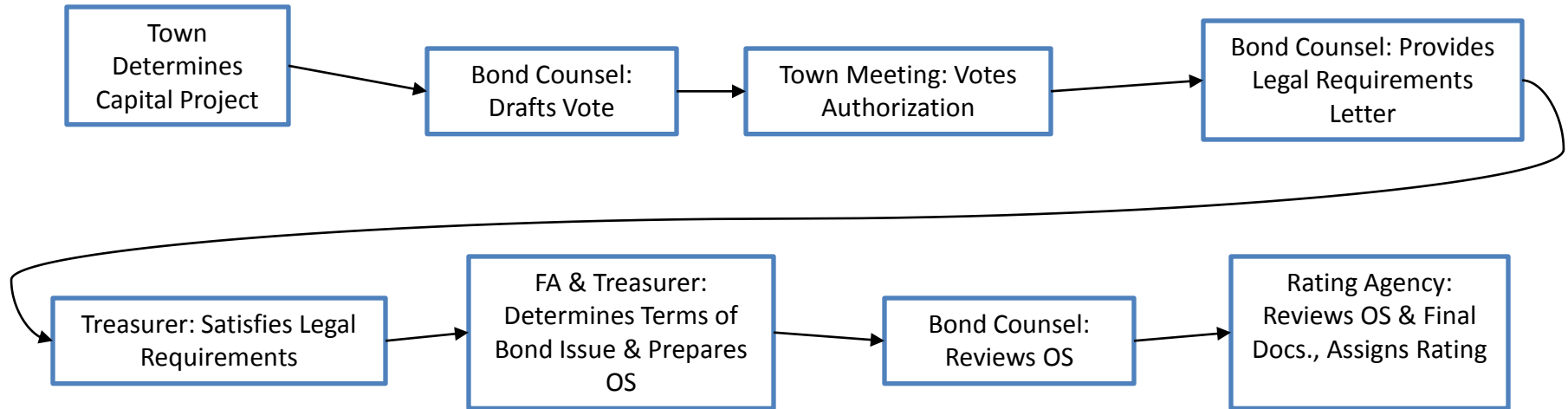
Municipal Disclosure

- Rule 15c 2-12
 - Exemptions:
 - Less than \$1 million sold
 - \$100,000 denominations and 35 or less sophisticated investors
 - Less than 9 months in term
 - Less than \$10 million debt outstanding (amended 2009)
 - Dealers cannot buy primary offering unless issuer has contracted to provide annual disclosure
 - Dealers cannot recommend the purchase of a primary offering unless the dealer is capable of receiving the issuer's information on a timely basis

Municipal Borrowing Flow Chart



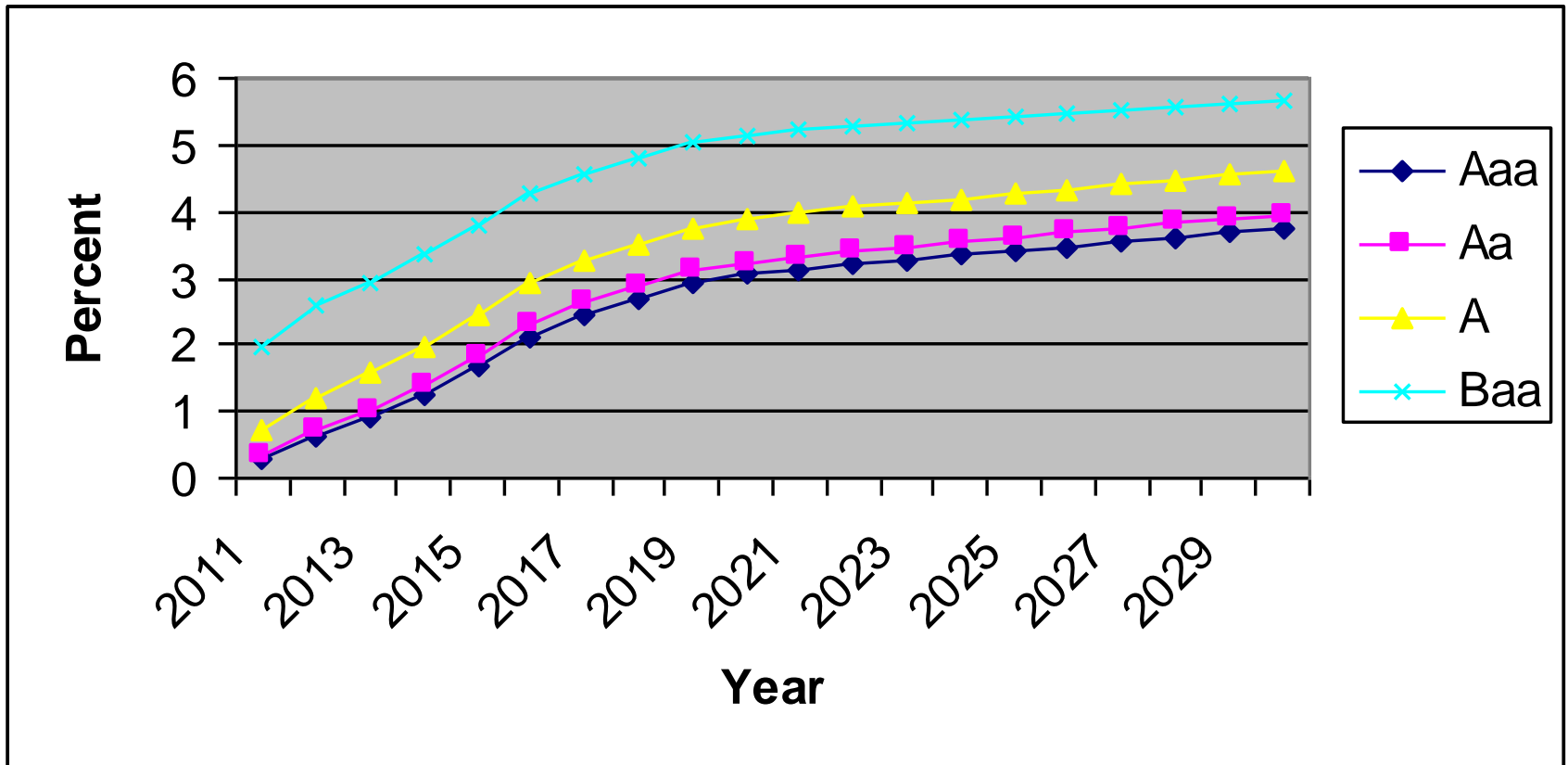
Municipal Borrowing Flow Chart



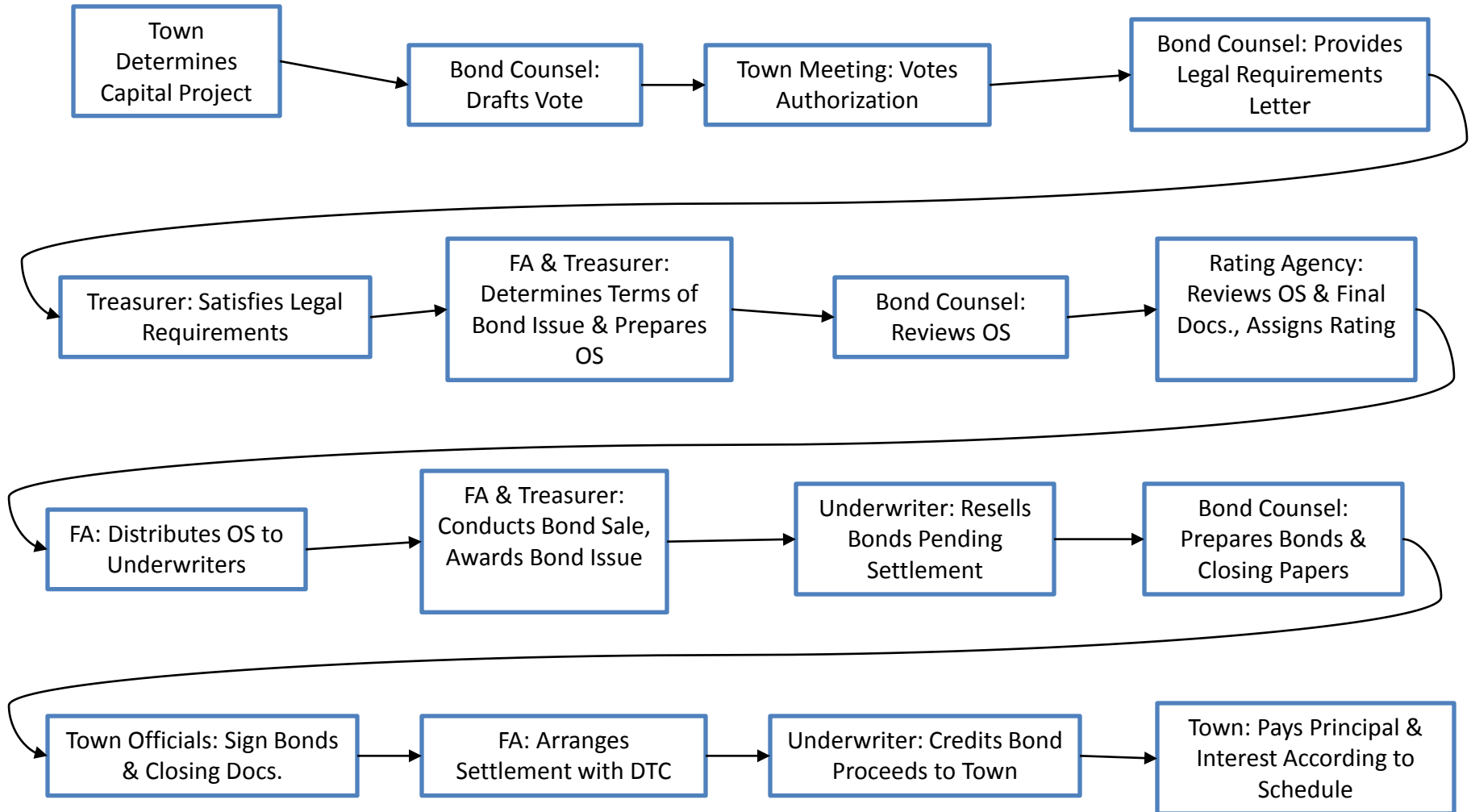
Bond Ratings

<u>Moody's</u>	<u>Standard & Poor's</u>
Aaa	AAA
Aa1	AA+
Aa2	AA
Aa3	AA-
A1	A+
A2	A
A3	A-
Baa1	BBB+
Baa2	BBB
Baa3	BBB-

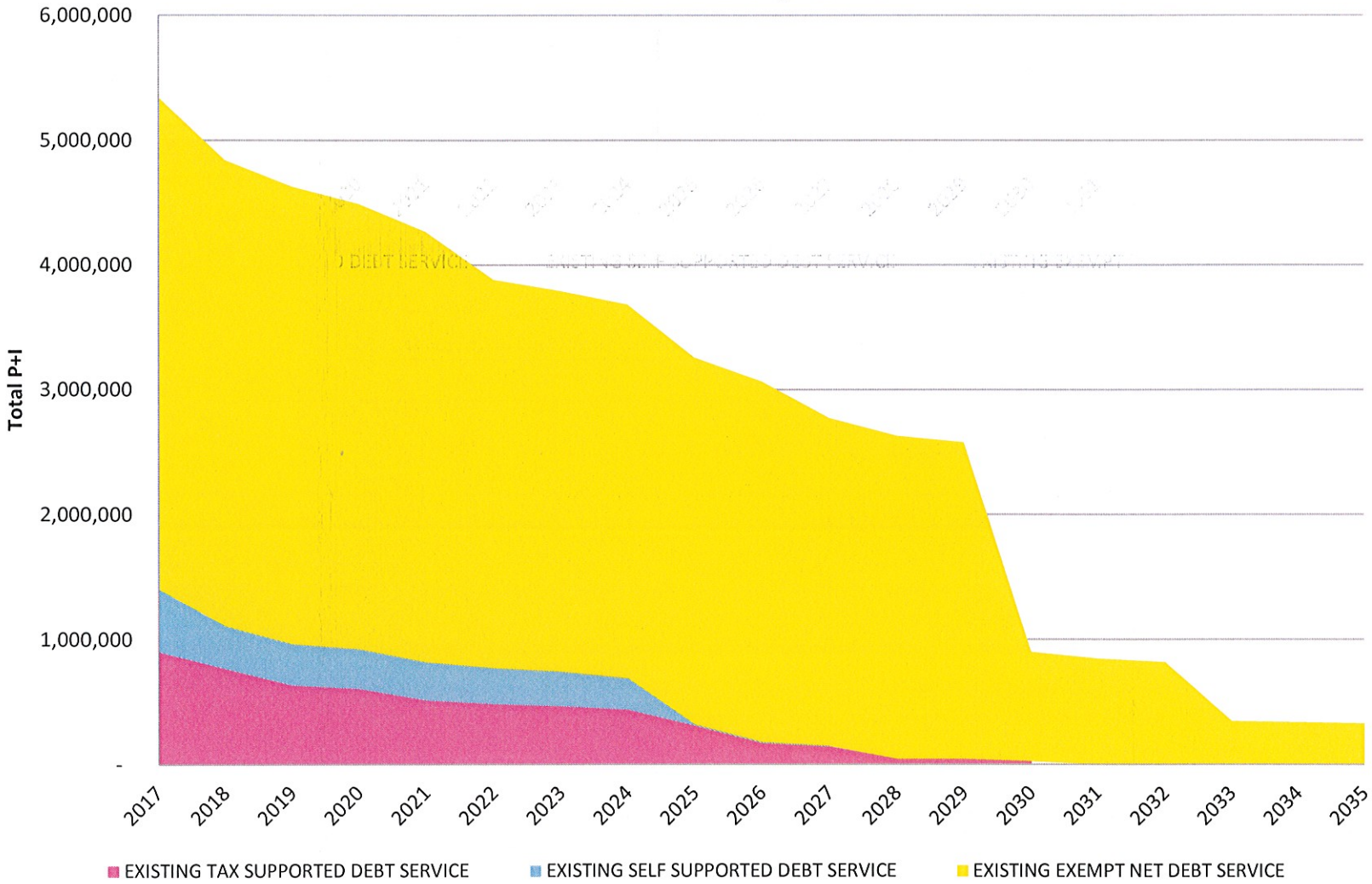
Yield Curves By Rating



Municipal Borrowing Flow Chart

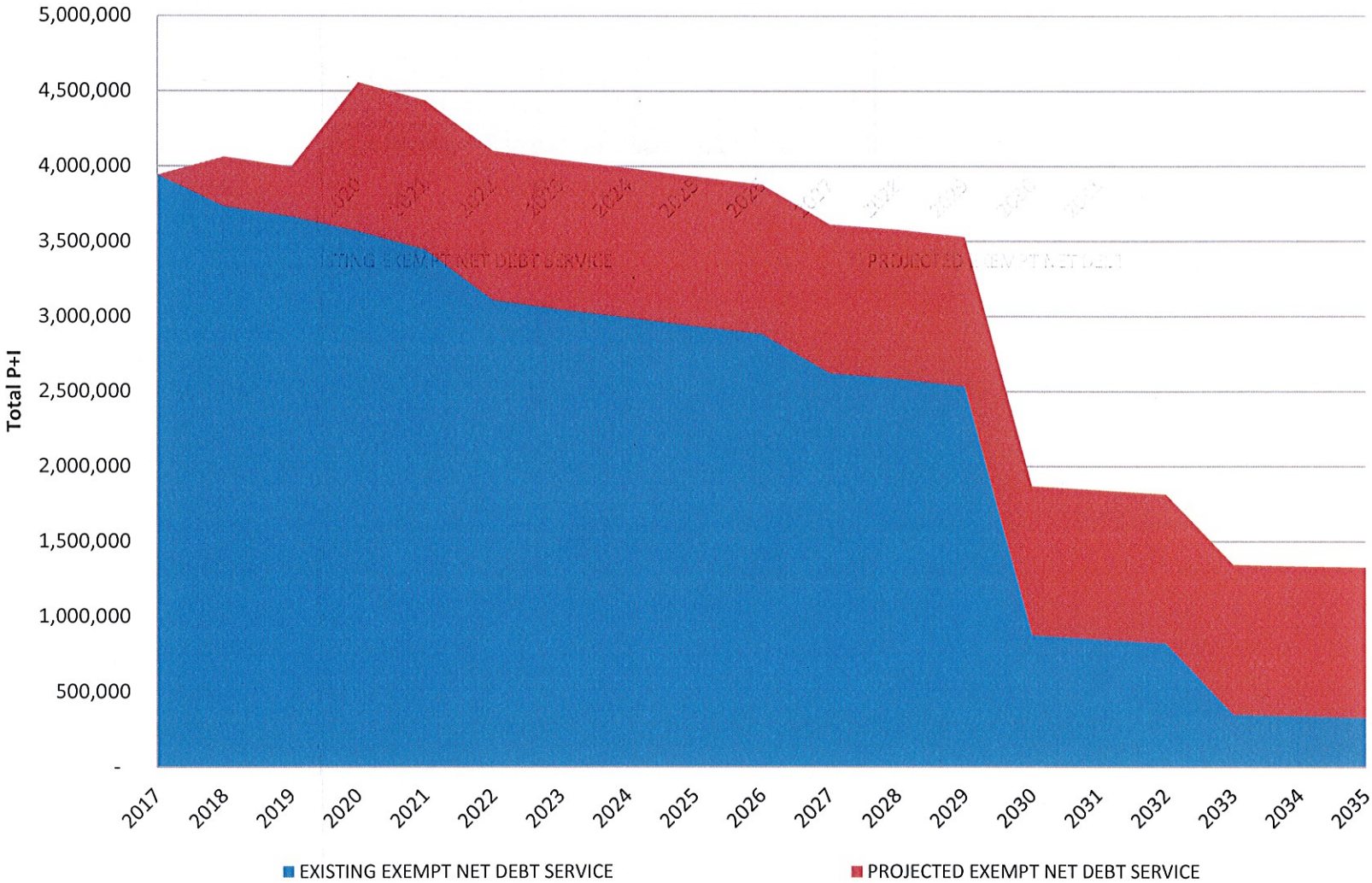


Town of Hanover, Massachusetts
Existing Debt Service
As of June 30, 2016

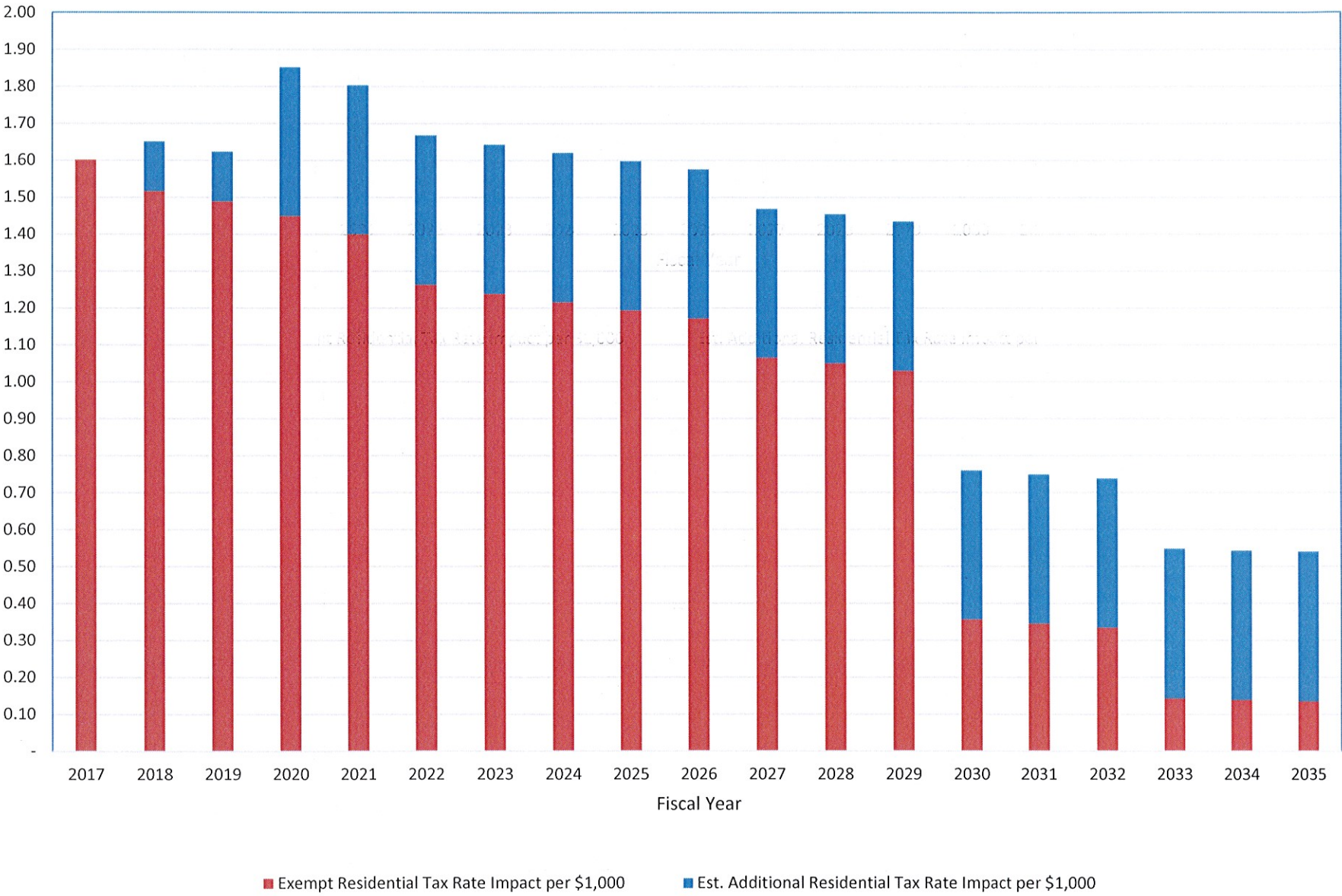


Town of Hanover, Massachusetts

Existing and Projected Exempt Debt Service



Town of Hanover, Massachusetts
Exempt Debt Service Estimated Residential Tax Rate Impact per \$1,000



Town of Hanover, Massachusetts
Sylvester School Project
Debt Service and Residential Tax Impact Estimate

Estimated Total Project Cost: \$ 32,000,000
 Estimated MSBA Reimbursement on eligible project costs: 51.83%
 Estimated Local Share of Project Costs: 16,585,600

Fiscal 2016 Residential Assessed Valuation: \$ 2,027,080,319

Fiscal Year	A		B		C		D		E		F = (B+E)		G		H	
	Net Existing Exempt Debt Service		Exempt Residential Tax Rate Impact per \$1,000		Sylvester School Projected Debt Service (1)		Additional Residential Tax Rate Impact per \$1,000	Est.	Dollar Tax Impact per \$100,000 of Home Value		Total Exempt Debt Residential Tax Rate Impact Per \$1,000		Change in Total Exempt Debt Tax Rate Impact Compared to 2017 base year		Dollar Tax Impact per \$100,000 of Home Value	
2017	\$ 3,942,251		\$ 1.60		\$ 331,700		\$ 0.13		\$ 13.47		\$ 1.60		\$ 0.00		\$ -	
2018	3,730,637		1.52		331,700		0.13		13.47		1.65		0.05		5.02	
2019	3,663,837		1.49		993,400		0.40		40.35		1.62		0.02		2.30	
2020	3,566,069		1.45		995,200		0.40		40.43		1.80		0.25		25.21	
2021	3,443,849		1.40		996,400		0.40		40.47		1.67		0.20		20.32	
2022	3,108,131		1.26		997,000		0.40		40.50		1.64		0.07		6.73	
2023	3,046,131		1.24		997,000		0.40		40.50		1.62		0.04		4.24	
2024	2,990,931		1.21		996,400		0.40		40.47		1.60		0.02		1.99	
2025	2,935,531		1.19		995,200		0.40		40.43		1.58		(0.00)		(0.28)	
2026	2,882,788		1.17		993,400		0.40		40.35		1.47		(0.02)		(2.47)	
2027	2,620,525		1.06		996,000		0.40		40.46		1.45		(0.13)		(13.20)	
2028	2,582,725		1.05		997,800		0.41		40.53		1.43		(0.15)		(14.63)	
2029	2,532,500		1.03		993,800		0.40		40.37		1.33		(0.17)		(16.59)	
2030	875,025		0.36		994,200		0.40		40.39		0.76		(0.84)		(84.09)	
2031	847,925		0.34		993,800		0.40		40.37		0.75		(0.85)		(85.17)	
2032	820,825		0.33		997,600		0.41		40.52		0.74		(0.86)		(86.29)	
2033	348,725		0.14		995,400		0.40		40.43		0.55		(1.05)		(105.31)	
2034	339,231		0.14		997,400		0.41		40.52		0.54		(1.06)		(105.79)	
2035	329,544		0.13		993,400		0.40		40.35		0.54		(1.06)		(106.10)	
2036	-		-		993,600		0.40		40.36		0.40		(1.20)		(119.65)	
2037	-		-		997,800		0.41		40.53		0.40		(1.20)		(119.64)	
2038	-		-		995,800		0.40		40.45		0.41		(1.19)		(119.47)	
2039	-		-		992,800		0.40		40.33		0.40		(1.20)		(119.55)	
2040	-		-		993,800		0.40		40.37		0.40		(1.20)		(119.67)	
2041	-		-		993,600		0.40		40.36		0.40		(1.20)		(119.63)	
2042	-		-		997,200		0.41		40.51		0.40		(1.20)		(119.64)	
2043	-		-		994,400		0.40		40.39		0.41		(1.19)		(119.49)	
2044	-		-		995,400		0.40		40.43		0.40		(1.20)		(119.61)	
2045	-		-		995,000		0.40		40.42		0.40		(1.20)		(119.57)	
2046	-		-		993,200		0.40		40.34		0.40		(1.20)		(119.58)	
2047	-		-								0.40		(1.20)		(119.66)	
	\$ 44,607,182				\$ 28,529,400				\$ 1,159							

(1) Estimated BAN rate of 2.0% & estimated Bond rate of 4.0%, subject to change.
 Tax Impact information assumes a constant assessed valuation (FY2016) and Residential/Commercial/Industrial tax rate mix.

TOWN OF HANOVER, MASSACHUSETTS

AUTHORIZED UNISSUED DEBT



DATED: June 24, 2016

DATE OF AUTHOR.		AMOUNT ORIGINALLY AUTHORIZED	AMOUNT BONDED, RESCINDED, PAID DOWN	DATE BONDED, RESCINDED, PAID DOWN	AMOUNT REMAINING	PURPOSE	LAW CITE	MAXIMUM TERM	NOTES OUTSTANDING	MATURITY DATE	ROLLOVER DATE	ORIGINAL ISSUE DATE	STATUS OF LEGAL APPROVALS
5/3/11	35	300,000	294,000	MCWT B- 1/7/15	6,000	Septic (T5-97-1140-A)	44-7(1)	30 Yrs	0	N/A			RL 10/3/11, PLO 11/3/11
5/6/14	28	275,000			275,000	Fire Department Breathing Apparatus	44-7(9)	5 - 20 Yrs	269,925	6/23/17	6/24/16	6/25/15	RL 7/29/14
5/6/14	29	130,000			130,000	Fire Department Portable Radio Equipment	44-7(9)	5 - 20 Yrs	115,050 5,199	6/32/17 6/32/17	6/24/16	6/25/15 6/24/16	RL 7/29/14
5/6/14	34	38,000			38,000	Pickup Truck	44-7(9)	5 - 20 Yrs	37,750	6/32/17	6/24/16	6/25/15	RL 7/29/14
5/6/14	35	70,000			70,000	Dump Truck	44-7(9)	5 - 20 Yrs	63,951	6/32/17	6/24/16	6/25/15	RL 7/29/14
5/6/14	36	170,000			170,000	Larger Dump Truck	44-7(9)	5 - 20 Yrs	156,526	6/32/17	6/24/16	6/25/15	RL 7/29/14
5/6/14	45	120,000			120,000	Elementary/Middle School HVAC Systems	44-7(3B)	5 - 20 Yrs	28,055 52,899	6/32/17 6/32/17	6/24/16	6/25/15 6/24/16	RL 7/29/14
5/6/14	48	500,000	24,941	MSBA as of 5/10/16	475,059	Sylvester School Feasibility Study (Max MSBA Grant - \$236,050)	44-7(21) or 7(3)/70B	5 or 30 Yrs	105,500 369,559	6/32/17 6/32/17	6/24/16	6/25/15 6/24/16	RL 7/29/14
5/12/14	54	140,000			140,000	Fire Department Generator Replacement	44-7(9)	5 - 20 Yrs	25,000 108,745	6/23/17 6/23/17	6/24/16	6/25/15 6/24/16	RL 7/29/14
5/12/14	57	50,000			50,000	Fire Headquarters Kitchen Renovation	44-7(3A)	30 Yrs	25,000 25,000	6/23/17 6/23/17	6/24/16	6/25/15 6/24/16	RL 7/29/14
5/2/16	5	500,000			500,000	Pond Street Water Treatment Plant	44-8(7C)	10					RL 9/27/16
5/2/16	20	220,000			220,000	Fire Pumping Engine	44-7(9)	5-20					RL 9/27/16
5/2/16	25	190,000			190,000	Large Dump Truck	44-7(9)	5-20					RL 9/27/16
5/2/16	26	250,000			250,000	Vacuum Sweeper Truck	44-7(9)	5-20					RL 9/27/16
5/2/16	29	1,519,200			1,519,200	Water Treatment Plants	44-8(7C)	10					RL 9/27/16
5/2/16	30	200,000			200,000	Water Mains	44-8(5)	40					RL 9/27/16
SUB-TOTAL		92,550,700			4,353,259				1,388,159				

Town of Hanover, Massachusetts
Actual Debt Service as of June 30, 2016

Actual Debt Service

Date of Issue	Purpose	Type of Payment	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total
10/25/2000	MWPAT 97-1140 (OE)	Principal	10,868	10,868	10,868	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32,604
		Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/25/2004	MWPAT CW-01-25 (I)	Principal	7,385	7,335	7,345	7,048	6,995	6,972	11,830	-	-	-	-	-	-	-	-	-	-	-	-	54,910
		Interest	695	555	416	281	142	0	-	-	-	-	-	-	-	-	-	-	-	-	-	2,089
8/15/2006	Water Main Rehabilitation3 (OSS)	Principal	25,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,000
		Interest	500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500
8/15/2006	Winter Street Facility (ISS)	Principal	100,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000
		Interest	2,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,000
8/15/2006	Rt. 53 Overpass Water Main (OSS)	Principal	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000
		Interest	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
8/15/2006	High School Generator (I)	Principal	15,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,000
		Interest	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300
8/15/2006	Sylvester School Boiler (I)	Principal	35,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35,000
		Interest	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	700
8/15/2006	Street Sweeper (I)	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/15/2006	Fire Station Roof (I)	Principal	5,000	-	-	-	-	-	-	-	-	-	-	-	5,000	-	-	-	-	-	-	5,000
		Interest	100	-	-	-	-	-	-	-	-	-	-	-	100	-	-	-	-	-	-	100
8/15/2006	DPW - Dump Truck (I)	Principal	10,000	-	-	-	-	-	-	-	-	-	-	-	10,000	-	-	-	-	-	-	10,000
		Interest	200	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	200
8/15/2006	DPW - Backhoe/Loader (I)	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/15/2008	Middle School Lighting (I)	Principal	10,000	10,000	-	-	-	-	-	-	-	-	-	-	20,000	-	-	-	-	-	-	20,000
		Interest	800	400	-	-	-	-	-	-	-	-	-	-	1,200	-	-	-	-	-	-	1,200
5/15/2008	Middle School Elevator (I)	Principal	10,000	10,000	-	-	-	-	-	-	-	-	-	-	20,000	-	-	-	-	-	-	20,000
		Interest	800	400	-	-	-	-	-	-	-	-	-	-	1,200	-	-	-	-	-	-	1,200
5/15/2008	Sylvester School Windows (I)	Principal	25,000	25,000	-	-	-	-	-	-	-	-	-	-	50,000	-	-	-	-	-	-	50,000
		Interest	2,000	1,000	-	-	-	-	-	-	-	-	-	-	3,000	-	-	-	-	-	-	3,000
5/15/2008	Land Acquisition (I)	Principal	75,000	75,000	-	-	-	-	-	-	-	-	-	-	150,000	-	-	-	-	-	-	150,000
		Interest	6,000	3,000	-	-	-	-	-	-	-	-	-	-	9,000	-	-	-	-	-	-	9,000
5/15/2008	Bridge Repair (I)	Principal	25,000	25,000	-	-	-	-	-	-	-	-	-	-	50,000	-	-	-	-	-	-	50,000
		Interest	2,000	1,000	-	-	-	-	-	-	-	-	-	-	3,000	-	-	-	-	-	-	3,000
5/15/2008	Tractor (I)	Principal	10,000	-	-	-	-	-	-	-	-	-	-	-	10,000	-	-	-	-	-	-	10,000
		Interest	400	-	-	-	-	-	-	-	-	-	-	-	400	-	-	-	-	-	-	400
5/15/2008	DPW Transfer Trailers (I)	Principal	25,000	-	-	-	-	-	-	-	-	-	-	-	25,000	-	-	-	-	-	-	25,000
		Interest	1,000	-	-	-	-	-	-	-	-	-	-	-	1,000	-	-	-	-	-	-	1,000
5/15/2008	Water Main (OSS)	Principal	10,000	10,000	-	-	-	-	-	-	-	-	-	-	20,000	-	-	-	-	-	-	20,000
		Interest	800	400	-	-	-	-	-	-	-	-	-	-	1,200	-	-	-	-	-	-	1,200
5/15/2008	Water Filters (OSS)	Principal	5,000	-	-	-	-	-	-	-	-	-	-	-	5,000	-	-	-	-	-	-	5,000
		Interest	200	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	200
5/15/2008	Chemical Feed Equipment (OSS)	Principal	5,000	-	-	-	-	-	-	-	-	-	-	-	5,000	-	-	-	-	-	-	5,000
		Interest	200	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	200
5/15/2008	Mower (I)	Principal	10,000	-	-	-	-	-	-	-	-	-	-	-	10,000	-	-	-	-	-	-	10,000
		Interest	400	-	-	-	-	-	-	-	-	-	-	-	400	-	-	-	-	-	-	400
5/15/2009	Senior Center (IE)	Principal	130,000	135,000	145,000	-	-	-	-	-	-	-	-	-	410,000	-	-	-	-	-	-	410,000
		Interest	17,850	12,650	7,250	-	-	-	-	-	-	-	-	-	37,750	-	-	-	-	-	-	37,750
5/15/2009	High School (IE)	Principal	700,000	730,000	760,000	-	-	-	-	-	-	-	-	-	2,190,000	-	-	-	-	-	-	2,190,000
		Interest	95,200	67,200	38,000	-	-	-	-	-	-	-	-	-	200,400	-	-	-	-	-	-	200,400
5/15/2009	Recreational Fields (I)	Principal	65,000	65,000	65,000	-	-	-	-	-	-	-	-	-	195,000	-	-	-	-	-	-	195,000
		Interest	8,450	5,850	3,250	-	-	-	-	-	-	-	-	-	17,550	-	-	-	-	-	-	17,550
3/1/2010	Cur Ref of 5 15 98 Water -34 (OSS)	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/1/2010	Cur Ref of 5 15 98 Water - 64 (OSS)	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/1/2010	Cur Ref of 5 15 98 Septic Sewer - 32 (I)	Principal	4,500	-	-	-	-	-	-	-	-	-	-	-	4,500	-	-	-	-	-	-	4,500
		Interest	180	-	-	-	-	-	-	-	-	-	-	-	180	-	-	-	-	-	-	180
3/1/2010	Cur Ref of 5 15 98 School - 39 (I)	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/1/2010	Cur Ref of 5 15 98 Police 22 - (IE)	Principal	175,500	-	-	-	-	-	-	-	-	-	-	-	175,500	-	-	-	-	-	-	175,500
		Interest	7,020	-	-	-	-	-	-	-	-	-	-	-	7,020	-	-	-	-	-	-	7,020
3/1/2010	Cur Ref of 5 15 00 - Equip 2 (I)	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/1/2010	Cur Ref of 5 15 00 - School (I)	Principal	20,000	20,000	-	-	-	-	-	-	-	-	-	-	40,000	-	-	-	-	-	-	40,000
		Interest	1,600	800	-	-	-	-	-	-	-	-	-	-	2,400	-	-	-	-	-	-	2,400
3/1/2010	Cur Ref of 5 15 00 - Landfill (O)	Principal	75,000	75,000	-	-	-	-	-	-	-	-	-	-	150,000	-	-	-	-	-	-	150,000
		Interest	6,000	3,000	-	-	-	-	-	-	-	-	-	-	9,000	-	-	-	-	-	-	9,000
3/1/2010	Adv Ref of 6 15 01 - Library (IE)	Principal	120,000	115,000	105,000	105,000	50,000	-	-	-	-	-	-	-	495,000	-	-	-	-	-	-	495,000
		Interest	17,200	12,400	7,800	4,650	1,500	-	-	-	-	-	-	-	43,550	-	-	-	-	-	-	43,550
3/1/2010	Adv Ref of 6 15 01 - Middle School (IE)	Principal	940,000	980,000	1,020,000	1,045,000	1,080,000	-	-	-	-	-	-	-	5,065,000	-	-	-	-	-	-	5,065,000
		Interest	171,150	133,550	94,350	63,750	32,400	-	-	-	-	-	-	-	495,200	-	-	-	-	-	-	495,200
9/14/2011	Alternative Energy (I)	Principal	45,000	45,000	45,000	45,000	45,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	25,000	-	-	-	-	-	570,000
		Interest	23,050	21,250	19,450	17,650	15,400	13,150	11,150	9,550	8,350	7,100	5,800	4,200	2,600	1,000	-	-	-	-	-	159,700
9/14/2011	Senior Center Construction (IE)	Principal	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	-	-	-	720,000
		Interest	28,969	27,169	25,369	23,569	21,319	19,069	16,819	15,019	13,669	12,263	10,800	9,000	7,200	5,400	3,600	1,800	-	-	-	241,031
9/14/2011	Outdoor Recreational Facilities (I)	Principal	60,000	60,000	60,000	60,000	55,000	55,000	55,000	55,000	-	-	-	-	-	-	-	-	-	-	-	460,000
		Interest	19,550	17,150	14,750	12,350	9,350	6,600	3,850	1,650	-	-	-	-	-	-	-	-	-	-	-	85,250
9/14/2011	High School Construction (IE)	Principal	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	-	-	-	6,400,000
		Interest	257,500	241,500	225,500	209,500	189,500	169,500	149,500	133,500	121,500	109,000	96,000	80,000	64,000	48,000	32,000	16,000	-	-	-	2,142,500

9/14/2011	Ambulance Replacement (I)	Principal	55,000	55,000	55,000	55,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	220,000
9/14/2011	Financial Software (I)	Interest	9,350	7,150	4,950	2,750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,200
9/14/2011	King Street Recreational Complex (I)	Principal	125,000	125,000	125,000	125,000	120,000	120,000	120,000	120,000	120,000	120,000	-	-	-	-	-	-	-	-	1,100,000
		Interest	45,400	40,400	35,400	30,400	24,150	18,150	12,150	7,350	3,750	-	-	-	-	-	-	-	-	-	217,150
9/14/2011	Roads (IE)	Principal	215,000	215,000	215,000	215,000	215,000	215,000	215,000	210,000	210,000	210,000	-	-	-	-	-	-	-	-	2,140,000
		Interest	86,488	77,888	69,288	60,688	49,938	39,188	28,438	19,838	13,388	6,825	-	-	-	-	-	-	-	-	451,963
9/11/2014	High School Construction I (OE)	Principal	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	5,700,000
		Interest	227,250	212,250	197,250	182,250	167,250	153,750	140,250	125,250	110,250	95,250	81,750	69,750	59,250	50,250	41,250	32,250	23,250	14,063	1,987,500
9/11/2014	High School Construction II (OE)	Principal	15,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	195,000
		Interest	7,700	7,075	6,575	6,075	5,575	5,125	4,675	4,175	3,675	3,175	2,725	2,325	1,975	1,675	1,375	1,075	775	469	66,375
9/11/2014	Street Construction (IE)	Principal	330,000	330,000	330,000	330,000	330,000	330,000	330,000	330,000	330,000	325,000	325,000	325,000	325,000	-	-	-	-	-	4,270,000
		Interest	188,950	172,450	155,950	139,450	122,950	108,100	93,250	76,750	60,250	43,875	29,250	16,250	4,875	-	-	-	-	-	1,212,350
1/7/2015	MWPAT 97-1140-A (OE)	Principal	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	14,700	279,300
		Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/24/2016	Water Mains (OSS)	Principal	15,000	15,000	15,000	15,000	15,000	10,000	10,000	1,500	-	-	-	-	-	-	-	-	-	-	96,500
		Interest	3,308	3,260	3,260	2,660	2,060	860	460	60	-	-	-	-	-	-	-	-	-	-	14,128
6/24/2016	Water Treatment Plant (OSS)	Principal	250,000	240,000	240,000	235,000	235,000	230,000	230,000	224,300	-	-	-	-	-	-	-	-	-	-	1,884,300
		Interest	64,978	65,372	55,772	46,172	36,772	27,372	18,172	8,972	-	-	-	-	-	-	-	-	-	-	323,582
6/24/2016	Water Mains 3 (OSS)	Principal	5,000	5,000	2,000	5,000	5,000	5,000	5,000	4,200	-	-	-	-	-	-	-	-	-	-	36,200
		Interest	1,247	1,248	1,048	968	768	568	368	168	-	-	-	-	-	-	-	-	-	-	6,383
6/24/2016	Equipment 2 (I)	Principal	5,000	5,000	4,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,500
		Interest	473	380	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,033
6/24/2016	Equipment 3 (I)	Principal	5,000	5,000	4,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,500
		Interest	473	380	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,033
6/24/2016	Middle School Lighting (I)	Principal	-	-	9,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	5,000	5,000	-	-	-	-	-	-	84,000
		Interest	2,907	3,260	2,900	2,500	2,100	1,700	1,300	900	500	100	-	-	-	-	-	-	-	-	21,427
6/24/2016	Middle School Elevator (I)	Principal	-	-	5,000	5,000	5,000	5,000	5,000	5,000	5,000	2,500	2,500	-	-	-	-	-	-	-	42,500
		Interest	1,471	1,650	1,650	1,450	1,250	1,050	850	650	450	250	50	-	-	-	-	-	-	-	10,771
6/24/2016	Sylvester School Windows (I)	Principal	-	-	25,000	25,000	25,000	25,000	25,000	25,000	25,000	20,000	15,000	-	-	-	-	-	-	-	210,000
		Interest	7,223	8,100	8,100	7,100	6,100	5,100	4,100	3,100	2,100	1,100	300	-	-	-	-	-	-	-	52,423
6/24/2016	Land Acquisition (I)	Principal	-	-	70,000	70,000	65,000	65,000	65,000	65,000	65,000	60,000	60,000	-	-	-	-	-	-	-	590,000
		Interest	19,973	22,400	22,400	19,600	16,800	14,200	11,600	9,000	6,400	3,800	1,200	-	-	-	-	-	-	-	147,373
6/24/2016	Bridge Repair (I)	Principal	-	-	25,000	25,000	25,000	25,000	20,000	20,000	15,000	12,500	-	-	-	-	-	-	-	-	187,500
		Interest	6,465	7,250	7,250	6,250	5,250	4,250	3,250	2,450	1,650	850	250	-	-	-	-	-	-	-	45,165
6/24/2016	Water Main (OSS)	Principal	-	-	10,000	9,300	10,000	10,000	10,000	10,000	10,000	5,000	5,000	-	-	-	-	-	-	-	84,300
		Interest	2,918	3,272	3,272	2,872	2,500	2,100	1,700	1,300	900	500	100	-	-	-	-	-	-	-	21,434
6/24/2016	Senior Center (IE)	Principal	-	-	-	150,500	155,000	160,000	165,000	170,000	180,000	185,000	195,000	200,000	197,500	-	-	-	-	-	1,758,000
		Interest	52,136	58,470	58,470	52,450	46,250	39,850	33,250	26,450	19,250	11,850	7,950	3,950	-	-	-	-	-	-	468,796
6/24/2016	High School (IE)	Principal	-	-	-	780,000	810,000	845,000	880,000	920,000	955,000	1,000,000	1,035,000	1,060,000	1,077,500	-	-	-	-	-	9,362,500
		Interest	277,353	311,050	311,050	311,050	279,850	247,450	213,650	178,450	141,650	103,450	63,450	42,750	21,550	-	-	-	-	-	2,502,753
6/24/2016	Recreational Fields (I)	Principal	-	-	-	65,200	65,000	60,000	60,000	60,000	-	-	-	-	-	-	-	-	-	-	310,200
		Interest	11,064	12,408	12,408	12,408	9,800	7,200	4,800	2,400	-	-	-	-	-	-	-	-	-	-	72,488
	Outstanding Principal		4,542,953	4,162,903	4,122,913	4,151,748	4,096,695	2,986,672	3,026,530	3,044,700	2,739,700	2,654,700	2,464,700	2,394,700	2,409,700	794,700	769,700	769,700	324,700	324,700	46,106,814
	Outstanding Interest		1,690,137	1,564,987	1,393,247	1,224,662	1,054,973	891,131	760,581	634,181	515,331	407,188	303,625	232,225	165,400	106,325	78,225	51,125	24,025	14,531	4,844
	Total Outstanding Long-Term Debt Service		6,233,090	5,727,889	5,516,161	5,376,410	5,151,669	3,877,803	3,787,111	3,678,881	3,255,031	3,061,888	2,768,325	2,626,925	2,575,100	901,025	847,925	820,825	348,725	339,231	57,223,557
	Less:																				
	Cedar MSBA Annual Aid Payment		(259,765)	(259,765)	(259,765)	(259,765)	(259,765)	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,298,825)
	Center MSBA Annual Aid Payment		(254,977)	(254,977)	(254,977)	(254,977)	(254,977)	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,274,885)
	Middle School MSBA Annual Aid Payment		(373,840)	(373,840)	(373,840)	(373,840)	(373,840)	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,869,200)
	Total State Aid		(888,582)	(888,582)	(888,582)	(888,582)	(888,582)	-	-	-	-	-	-	-	-	-	-	-	-	-	(4,442,910)
	Net Outstanding Long-Term Debt Service		5,344,508	4,839,307	4,627,579	4,487,828	4,263,087	3,877,803	3,787,111	3,678,881	3,255,031	3,061,888	2,768,325	2,626,925	2,575,100	901,025	847,925	820,825	348,725	339,231	52,780,647
EXISTING EXEMPT NET DEBT SERVICE																					
	Exempt Principal		3,396,068	3,285,568	3,355,568	3,395,200	3,409,700	2,319,700	2,359,700	2,404,700	2,444,700	2,489,700	2,324,700	2,354,700	2,369,700	769,700	769,700	769,700	324,700	324,700	39,192,904
	Exempt Interest		1,434,765	1,333,651	1,196,851	1,059,451	922,731	788,431	686,431	586,231	490,831	393,088	295,825	228,025	162,800	105,325	78,225	51,125	24,025	14,531	9,857,188
	Less: MSBA Annual Aid Payments		(888,582)	(888,582)	(888,582)	(888,582)	(888,582)	-	-	-	-	-	-	-	-	-	-	-	-	-	(4,442,910)
	Total Exempt Long-Term Net Debt Service		3,942,251	3,730,637	3,663,837	3,566,069	3,443,849	3,108,131	3,046,131	2,990,931	2,935,531	2,882,788	2,620,525	2,582,725	2,532,500	875,025	847,925	820,825	348,725	339,231	44,607,182
Existing Tax Rate Impact			1.60	1.52	1.49	1.45	1.40	1.26	1.24	1.21	1.19	1.17	1.06	1.05	1.03	0.36	0.34	0.33	0.14	0.14	0.13
EXISTING TAX SUPPORTED DEBT SERVICE																					
	Principal		721,885	607,335	500,345	492,248	421,995	411,972	411,830	400,000	285,000	155,000	135,000	40,000	40,000	25,000	-	-	-	-	4,647,610
	Interest		179,022	157,783	133,644	113,139	90,742	71,800	53,450	37,450	23,600	13,600	7,700	4,200	2,600	1,000	-	-	-	-	889,730
	Total Tax Supported Long-Term Debt Service		900,908	765,118	633,989	605,387	512,737	483,772	465,280	437,450	308,600	168,600	142,700	44,200	42,600	26,000	-	-	-	-	5,537,340
EXISTING SELF SUPPORTED DEBT SERVICE																					
	Principal		425,000	270,000	267,000	264,300	265,000	255,000	255,000	240,000	10,000	10,000	5,000	-	-	-	-	-	-	-	2,266,300
	Interest		76,350	73,552	62,752	52,072	41,500	30,900	20,700	10,500	900	500	100	-	-	-	-	-	-	-	369,826
	Total Self Supported Long-Term Debt Service		501,350	343,552	329,752	316,372	306,500	285,900	275,700	250,500	10,900	10,500									

SCENARIO A - BOND MARCH 2015

Projected Debt Service

2.00%	Projected Interest Rate on BANs/Notes
4.00%	Projected Interest Rate on Bonds
\$ 2,027,080,319	Fiscal 2016 Residential Assessed Valuation

Authorization Date	Purpose	Type of Payment	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	Total
5/5/2014	Fire - Breathing Apparatus	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	\$ 275,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.7(9) - max 5-20yrs	BAN Interest	5,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5/5/2014	Fire - Portable Radio Equipment	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\$ 130,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.7(9) - max 5-20yrs	BAN Interest	2,398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5/5/2014	Pick up Truck	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\$ 38,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.7(9) - max 5-20yrs	BAN Interest	753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5/5/2014	Dump Truck	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\$ 70,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.7(9) - max 5-20yrs	BAN Interest	1,275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5/5/2014	Larger Dump Truck	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\$ 170,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.7(9) - max 5-20yrs	BAN Interest	3,122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5/5/2014	Elementary/Middle School HVAC Systems	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\$ 120,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.7(3B) - max 20yrs	BAN Interest	1,615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5/5/2014	Sylvester School Feasibility Study	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\$ 500,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.7(21) or 70B - max 5-30yrs	BAN Interest	9,475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5/5/2014	Fire - Generator Replacement	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\$ 140,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.7(9) - max 5-20yrs	BAN Interest	2,667	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5/5/2014	Fire - Headquarters Kitchen Renovation	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\$ 50,000	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Ch.44, s.7(3A) - max 30yrs	BAN Interest	997	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Projected \$32,446,161 School - MSBA Reimburs	Principal	-	-	-	330,000	345,000	360,000	375,000	390,000	405,000	420,000	435,000	455,000	475,000	490,000	510,000	530,000	555,000	575,000	600,000	620,000	645,000	675,000	700,000	725,000	755,000	785,000	820,000	850,000	885,000	920,000	955,000	16,585,000
	\$ 16,585,000	Interest	-	-	-	663,400	650,200	636,400	622,000	607,000	591,400	575,200	558,400	541,000	522,800	503,800	484,200	463,800	442,600	420,400	397,400	373,400	348,600	322,800	295,800	267,800	238,800	208,600	177,200	144,400	110,400	75,000	38,200	11,281,000
	Estimated Local Share (max MSBA \$15,861,754)	BAN Interest	-	331,700	331,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Total Principal	-	-	-	330,000	345,000	360,000	375,000	390,000	405,000	420,000	435,000	455,000	475,000	490,000	510,000	530,000	555,000	575,000	600,000	620,000	645,000	675,000	700,000	725,000	755,000	785,000	820,000	850,000	885,000	920,000	955,000	16,585,000	
	Total Interest	27,686	331,700	331,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Total Projected Debt	27,686	331,700	331,700	993,400	995,200	996,400	997,000	997,000	996,400	995,200	993,400	996,000	997,800	993,800	994,200	993,800	997,600	995,400	997,400	993,400	993,600	997,800	995,800	992,800	993,800	993,600	997,200	994,400	995,400	995,000	993,200	28,557,086	
PROJECTED EXEMPT NET DEBT SERVICE			-	-	-	330,000	345,000	360,000	375,000	390,000	405,000	420,000	435,000	455,000	475,000	490,000	510,000	530,000	555,000	575,000	600,000	620,000	645,000	675,000	700,000	725,000	755,000	785,000	820,000	850,000	885,000	920,000	955,000	16,585,000
	Exempt Principal	-	-	-	330,000	345,000	360,000	375,000	390,000	405,000	420,000	435,000	455,000	475,000	490,000	510,000	530,000	555,000	575,000	600,000	620,000	645,000	675,000	700,000	725,000	755,000	785,000	820,000	850,000	885,000	920,000	955,000	16,585,000	
	Exempt Interest	-	-	-	663,400	650,200	636,400	622,000	607,000	591,400	575,200	558,400	541,000	522,800	503,800	484,200	463,800	442,600	420,400	397,400	373,400	348,600	322,800	295,800	267,800	238,800	208,600	177,200	144,400	110,400	75,000	38,200	11,281,000	
	Exempt BAN Interest	-	331,700	331,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Total Projected Exempt Debt Service	-	331,700	331,700	993,400	995,200	996,400	997,000	997,000	996,400	995,200	993,400	996,000	997,800	993,800	994,200	993,800	997,600	995,400	997,400	993,400	993,600	997,800	995,800	992,800	993,800	993,600	997,200	994,400	995,400	995,000	993,200	28,529,400	
Projected Tax Rate Impact			-	0.13	0.13	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
	Total	1.60	1.65	1.62	1.85	1.80	1.67	1.64	1.62	1.69	1.58	1.47	1.45	1.43	0.76	0.75	0.74	0.55	0.54	0.54	0.40	0.40	0.41	0.40	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.40	0.40	
PROJECTED TAX SUPPORTED DEBT SERVICE			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Principal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	BAN Interest	27,686	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Total Projected Tax Supported																																	

CREDIT OPINION

13 June 2016

New Issue
Rate this Research

Contacts

Nicholas Lehman 617-535-7694
 Assistant Vice President
 nicholas.lehman@moody.com

Vanessa Youngs 212-553-7127
 Analyst
 vanessa.youngs@moody.com

Hanover (Town of) MA

New Issue - Moody's Assigns Aa2 to Hanover MA's \$14.5M GO Ref. Bonds and MIG 1 to \$1.4M GO BANS

Summary Rating Rationale

Moody's Investors Service has assigned a MIG 1 rating to the Town of Hanover's (MA) \$1.4 million General Obligation Bond Anticipation Notes (BANS, dated June 24, 2016 and payable June 23, 2017) and Aa2 long-term rating to \$14.5 million General Obligation Refunding Bonds. Concurrently, Moody's has affirmed the Aa2 rating on \$45.6 million in outstanding general obligation debt.

The Aa2 rating reflects the stable financial position with adequate reserves, sizable tax base with favorable wealth levels and an above-average but manageable debt burden.

The MIG 1 rating incorporates the town's long-term credit strength, satisfactory refinancing risk and strong liquidity.

Credit Strengths

- » Favorable wealth and income levels
- » Solid reserve and liquidity levels

Credit Challenges

- » Moderate debt and pension liability
- » Limited revenue raising flexibility due to Proposition 2 ½

Rating Outlook

Outlooks are usually not assigned to local government credits with this amount of debt outstanding.

Factors that Could Lead to an Upgrade

- » Significant tax base expansion
- » Large reduction in the debt burden
- » Increase in available reserves

Factors that Could Lead to a Downgrade

- » Material increase in the debt burden
- » Multi-year trend of operating imbalance resulting in the decline in reserves
- » Significant decline in the tax base and demographic profile

Key Indicators

Exhibit 1

Hanover (Town of) MA	2011	2012	2013	2014	2015
Economy/Tax Base					
Total Full Value (\$000)	\$ 2,614,165	\$ 2,435,053	\$ 2,435,053	\$ 2,378,821	\$ 2,383,515
Full Value Per Capita	\$ 188,354	\$ 175,449	\$ 175,449	\$ 165,656	\$ 171,735
Median Family Income (% of US Median)	N/A	190.8%	190.8%	190.8%	190.8%
Finances					
Operating Revenue (\$000)	\$ 50,854	\$ 54,155	\$ 55,087	\$ 57,225	\$ 54,793
Fund Balance as a % of Revenues	15.3%	16.8%	17.2%	16.1%	16.8%
Cash Balance as a % of Revenues	21.1%	21.6%	21.6%	21.0%	23.8%
Debt/Pensions					
Net Direct Debt (\$000)	\$ 58,775	\$ 60,700	\$ 52,155	\$ 53,579	\$ 49,707
Net Direct Debt / Operating Revenues (x)	1.2x	1.1x	0.9x	0.9x	0.9x
Net Direct Debt / Full Value (%)	2.2%	2.5%	2.1%	2.3%	2.1%
Moody's - adjusted Net Pension Liability (3-yr average) to Revenues (x)	N/A	0.8x	0.9x	1.0x	0.9x
Moody's - adjusted Net Pension Liability (3-yr average) to Full Value (%)	N/A	1.8%	2.1%	2.4%	2.0%

As of June 30 fiscal year-end
 Full value = equalized value
 Source: Moody's Investors Service

Detailed Rating Considerations

Economy and Tax Base: Moderate Tax Base Growth Expected As Wealth Levels Remain Strong

The town's \$2.4 billion tax base has recently stabilized and will experience modest growth over the medium term as the housing and commercial sectors continue to rebound from the recession. The town is primary residential (85% of 2016 assessed value) but does have a commercial presence primarily along Routes 3 and 53. Assessed value has seen increases of 5.1% and 2.8% in 2015 and 2016, respectively, bringing the five-year compound growth to 0.5%. New growth revenue continues to trend above the conservatively budgeted \$340,000 annually and we expect that to continue over the near term. New residential development includes new single family homes, 130 condo units and a 76-unit apartment complex. Additionally, the Hanover Mall and the University Sports Complex continue to have a regional attraction. Wealth and income levels continue to be well above average with median family income equal to 175% of the US median. The unemployment rate of 3.5% (February 2016) continues to trend below the commonwealth (4.7%) and US (5.2%).

Financial Operations, Reserves and Liquidity: Stability Expected To Continue Through Conservative Budgeting

The town's financial position will remain stable over the near term given conservative fiscal management. The fiscal 2015 audited financials reflect an operating surplus of \$1.1 million attributable to strong local receipts including excise taxes and modest departmental turnbacks. The surplus helped to increase restricted reserves while the available General Fund balance (committed, assigned and unassigned) remained unchanged from 2014 at \$9.2 million or 16.8% of revenues. The available reserves includes \$923,337 of committed reserves towards an OPEB stabilization fund. If the town establishes an irrevocable trust, those funds would

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

be transferred out of the General Fund and reserves would experience a decline. The primary revenue source is property taxes (70% of 2015 revenues) with strong history of collection rates of 99% within the current fiscal year.

The fiscal 2016 budget increased by 4.5% from the prior year driven in part by salaries and employee benefits. The budget was balanced with a 6% increase in the tax levy including debt exclusions. Operations through April are trending positive and year-end projections indicate an operating surplus.

The fiscal 2017 budget increased by just under 3% from 2016 and will be balanced with a tax levy of around 3.5%. As in the last two years, we expect the town to continue to operate and manage a structurally balanced budget with recurring revenues matching recurring expenditures without the use of free cash.

LIQUIDITY

Cash and investments at the end of fiscal 2015 represented \$13 million or a healthy 23.8% of revenues. The liquidity position provides just under 10 times coverage to the BANs outstanding should market access be a challenge at maturity.

Debt and Pensions: Above Average Debt Burden and Moderate Pension Liability To Remain Manageable

The town's net direct debt burden of 1.9% of 2016 equalized value will remain above average given future borrowing plans. We expect the burden to remain manageable given amortization of principal and plans for large portion to be excluded from Proposition 2 ½. The 2017 five-year capital plan totals \$46.6 million with 78% to be funded through debt financing. The primary factor to the larger debt burden is school related projects. The current plan includes a \$15 million school renovation.

DEBT STRUCTURE

The entire debt portfolio is fixed rate with 78% of principal retired in ten years. Fiscal 2015 debt service represented 9.4% of expenditures.

DEBT-RELATED DERIVATIVES

Hanover is not party to any derivative agreements.

PENSIONS AND OPEB

The town participates in the Plymouth County Retirement System, a multi-employer, defined benefit retirement plans administered by the County Retirement Board. The town continues to pay required contribution to the plan which was \$2.6 million in fiscal 2015, or 4.9% of General Fund expenditures. The town's 2015 three-year average Moody's adjusted net pension liability, under Moody's methodology for adjusting reported pension data, is \$46.8 million, or approximately 0.85 times General Fund revenues. Moody's uses the adjusted net pension liability to improve comparability of reported pension liabilities. The adjustments are not intended to replace the town's reported liability information, but to improve comparability with other rated entities. We determined the town's share of liability for the county-run plan in proportion to its contributions to the plan. The projected funding date for the plan is 2032.

The town also makes pay-as-you-go contributions towards its OPEB liability totaling \$1.9 million in 2015 or 56% of the annual cost. As of the latest valuation report dated January 1, 2015, the plan is 0.09% funded with an unfunded liability of \$34.9 million. The town dedicates its local meals tax revenues (\$516,000 in fiscal 2015) toward an OPEB stabilization fund in the General Fund.

Total fixed costs in 2015 including debt service, required pension contributions and retiree healthcare payments represented \$9.6 million, or 17.8% of General Fund expenditures.

Management and Governance

The town continues to operate under fiscally conservative budgeting with formal policies and a five-year capital plan.

Massachusetts towns have an institutional framework score of "Aa," or strong. Revenues are highly predictable due to a heavy reliance on property taxes. Towns have a moderate revenue-raising ability given the Proposition 2 ½ levy limit. Expenditures primarily consist of personnel costs, as well as education costs for cities that manage school operations, and are highly predictable given state-mandated school spending guidelines and employee contracts. Towns have a moderate expenditure reduction ability given the high presence of collective bargaining contracts, offset by low fixed costs in most cases.

Legal Security

A portion of the advance refunding bonds, that are refunding bonds dated May 15, 2009, are secured by the town's general obligation unlimited tax pledge as debt service has been voted exempt from the tax levy limits of Proposition 2 ½. The balance of the refunding bonds are secured by the town's general obligation limited tax pledge as debt service has not been voted exempt from the levy limitation of Proposition 2 ½.

The notes are secured by the town's general obligation limited tax pledge as debt service has not been voted exempt from the tax levy limits of Proposition 2 ½.

Use of Proceeds

The bonds will current refund the town's bond dated June 15, 2004 and advance refund bonds dated May 15, 2008 and May 15, 2009 for a total estimated net present value savings of \$1.1 million or 7.2% of refunded principal with not extension of maturity.

The notes will renew a \$826,757 of BANs maturing on June 24, 2016 and provide new funding all towards various capital projects.

Obligor Profile

Hanover is located 25 miles south of Boston (Aaa stable) with a population of 13,879. The town is primarily residential with some commercial presence.

Methodology

The principal methodology used in the long term rating was US Local Government General Obligation Debt published in January 2014. The principal methodology used in the short term rating was US bond Anticipation Notes published in April 2014. Please see the Ratings Methodologies page on www.moody.com for a copy of these methodologies.

Ratings

Exhibit 2

Hanover (Town of) MA

Issue	Rating
General Obligation Refunding Bonds	Aa2
Rating Type	Underlying LT
Sale Amount	\$14,537,000
Expected Sale Date	06/16/2016
Rating Description	General Obligation Limited Tax
General Obligation Bond Anticipation Notes	MIG 1
Rating Type	Underlying ST
Sale Amount	\$1,388,159
Expected Sale Date	06/23/2016
Rating Description	Note: Bond Anticipation

Source: Moody's Investors Service

© 2016 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing the Moody's Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Investor Relations Corporate Governance Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

Contacts

Nicholas Lehman
Assistant Vice President
nicholas.lehman@moody's.com

617-535-7694

Vanessa Youngs
Analyst
vanessa.youngs@moody's.com

212-553-7127

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454