March 26, 2018

Dear President Walker, Chair Hamilton, and Alders,

We write to provide our perspective on the city's fiscal situation, our thoughts on the guiding principles the city should follow in its budgeting process, and a bottom-line analysis of the Mayor's budget proposal; two appendices follow the main text.

We are New Haven citizens, and we constitute the city's Financial Review and Audit Commission, an independent and non-partisan body that advises the Mayor's office, the Board of Alders, and the public on the city's finances. Members of the public are invited to attend our meetings (usually the first Thursdays of each month at 6pm in City Hall).

(1) Overview of City's Fiscal Situation

Our city's economic base–from Yale University and Yale New Haven Hospital on one hand to start-ups like SeeClickFix on the other–remained resilient throughout the Great Recession and has continued to grow in the intervening years, even as the remainder of the state has suffered economic stagnation and population losses. However, our city's relative economic prosperity has not insulated us from the fiscal challenges facing other municipalities in Connecticut and our state government.

The 2009, the Blue Ribbon Budget Review Panel had foresight in listing 5 key fiscal challenges that New Haven would face:

- "We carry a heavy load of debt and liability, the largest per capita of any municipality in the state.[1]
- "We rely heavily on state aid, a revenue source over which we have no control and one that is likely to diminish in the next several years.
- "We spend more on education than on anything else, yet our students' performance consistently ranks among the lowest in the state.
- "It is difficult or impossible to equitably distribute the burden of the main revenue source we do control, property tax.
- "The major industries of the city are non-profits, and many of their properties are exempted from taxation by the state."

Nearly 9 years later, these challenges unfortunately remain. In addition to these challenges, we suggest to add another:

[1] Given the increase in indebtedness of Hartford and other municipalities since 2009, this comparison may no longer hold. But that our debt load is "heavy" is true.

- A small but growing portion of our city's budget–both costs and revenues–are highly variable.[2] The city's budget could easily end up millions of dollars out of balance in any given year simply due to a small number of chance events.

(2) Guiding Principles for Budgeting

We commend the Mayor and the Board of Alders for going through an open and thorough budgeting process with open hearings and public feedback. This is indeed an important best practice that will lead to more informed budgeting and deeper community engagement.

We would like to put forward several principles that we hope the Board of Alders will consider during the budgeting process:

- **Debt should not be used for operating expenses**. This is a very important best practice, and any attempt to circumvent this best practice will lead to investors punishing the city through higher interest rates. Operating expenses are everyday things like salaries and benefits, and if we can't afford these expenses this year (so that we put them on the city's "credit card"), then how could we afford these expenses next year on top of the new debt payments?
- **The budget should balance without gimmicks**. Certain financial transactions–such as the refunding of bonds[3]–can have legitimate purposes, but the city has largely used these transactions to shift operating expenses onto debt. This is one reason why New Haven's credit ratings are similar to cities' like Bridgeport.[4]
- **Our actuarially recommended pension obligations should be met in full, and at the beginning of the fiscal year**. Any attempt to defer pension payments simply means that we are borrowing from the city's future taxpayers to spend today. Investors will punish us for this practice. Furthermore, the money should be invested in the pension funds at the start of the fiscal year in order to lock in as much market gains as possible.
- **Our budget should be built on realistic assumptions and estimates**. That means that we should budget for employee medical expenses to rise by 5-8% each year, due to the high rate of medical cost inflation in the country. It also means that we should budget for our pension funds to earn returns of 5.75-6.75% in real terms, not 7-8%. Additionally, the city habitually underbudgets reasonable overtime for police and fire.
- **Our budget should be robust**. This means that we should reasonably expect the budget to balance without resorting to mid-year budget cuts or by using any financial gimmicks. In practice, this means that the budget should be adopted using reasonable

[2] Among costs, this includes possible surprises like major litigation or settlements. Among revenues, this includes one-time revenue sources like building permit fees.
[3] Note that the federal tax cut and reform bill last year restricts the practice of municipal advance refunding, which is a type of refunding that New Haven has used extensively. Another type of refunding, called current refunding, remains legal.
[4] Moody's rates both New Haven and Bridgeport as Baa1. This is 2 notches above junk, and 11 notches above Hartford.

assumptions and with a small financial cushion (such as $2m) between expected revenues and costs. Furthermore, we should strive to replenish our Rainy Day Fund to at least $25M, which is about 5% of the General Fund. Having a robust Rainy Day Fund is an important signal to investors and helps the city weather the increasing variability in its revenues and costs.

- **A rule of thumb is that year-over-year, the general fund should increase by the Employment Cost Index (ECI) for state and local government employees per capita.** This is because the amount of city services that must be provided goes up with population, and the cost of these services goes up roughly in line with the cost of labor (ECI is a measure of labor costs). In practice, this means that spending in the general fund would increase roughly 2.5% per year. (Of course, there may be reasonable justifications for why spending might increase more or less than ECI per capita.) Alternative approaches to budgeting, such as zero-based budgeting, are also appropriate.
- **The length of bonds (in years) should be less than or equal to the life of the associated capital project.**[5] For example, software with a usable life of 3-4 years should not be bonded over a 30 year period.
- **Whenever possible, the city should direct funds towards programs that are proven to work, and away from programs that don't.** We should learn from the experiences of practitioners and researchers who have studied municipal services when deciding how to direct our city's resources. Even better, the city should partner with researchers right here in New Haven to study our own city programs.

In laying out the above guidelines, why do we reference credit ratings and investors?:

- In the short-term, the city's significant debt liability will become increasingly expensive if our credit rating deteriorates and our interest rates increase in response. This means that a bigger and bigger fraction of the general fund would go to paying down debt. So maintaining investor confidence and our credit ratings are important.
- In the long-term, we believe that credit ratings and interest rates are a leading indicator of the city's economic growth potential, quality of life, and vibrancy. Thus, whenever we see investor sentiment turning sour on the city, we should ask why and try to address the root cause(s).

(3) Analysis of the Mayor's Budget Proposal

In presenting this analysis of the Mayor's budget proposal, FRAC has no agenda, partisan or otherwise. Further, we do not remark on the choice of how dollars are being allocated across departments or city programs, because we believe that the choice of allocation lies with the political branches. What we do below is present a bottom-line analysis of the Mayor's budget proposal within the context of the city's budget performance in prior fiscal years.

[5] Capital projects, like roads and bridges, are investments the city makes that will have a long-term payoff.

In broad terms, the Mayor's budget requests $547.1M in the general fund, $59.1M for capital projects, and $29.0M in special funds for a total budget of $635.2M. This compares to last year's approved budget of $538.9M in the general fund, $45.3M in the capital fund, and $20.0M in special funds, for a total budget of $604.2M. Thus, the Mayor's budget represents a 5.1% increase over last year's approved budget. Note that these values do not reflect (1) $113M in special funds for education in the current fiscal year, because similar values were not available in the proposed budget, and (2) other smaller sources of funding in the capital and special funds.

We assess that the Mayor's proposed budget could be out of balance by roughly $27-50.2M, and that the budget in FY17-18 is out of balance by roughly $34-54.6M. These variances (in both the Mayor's proposal and in the current year budget) are due both to spending that exceeds budgeted amounts, and also to shortfalls in revenue. For the level of spending in the proposed budget, we estimate that property taxes should be raised to 47.2 mills or more to achieve budget balance. Based on our collective experience, these budget imbalances are historically large for New Haven.

We would direct your attention to the following specific areas of the Mayor's budget:

- **Board of Education**: The BOE is our city's single largest area of expenditure. Additionally, the cost for the BOE has increased year over year.[6] In FY16-17, the BOE spent $184.8M, though the budgeted amount was $182.2M. In FY17-18, the BOE is expected to spend $194.1M, though the budgeted amount is $187.2M. For FY18-19 the BOE requested a $10 million increase in funding to $197.2M, but the Mayor's budget asks for a $5 million increase to $192.2M. Any budget increase for the BOE that is less than their current deficit of $7M would likely mean that the BOE would run a deficit again next year. We suggest, whatever the amount that is approved for the BOE, that Alders work closely with the BOE and the new superintendent to keep spending within the budgeted limit.

- **Pensions**: The city has been making increasing payments into its pension funds over the past few years, in line with actuarially recommended amounts. In FY16-17, the city put $48.1M into its pension funds. In FY17-18, the city has or will put in $56.5M. To remain on-path to fully fund our pension plans by 2040, our actuaries indicate that pension payments should increase by roughly 3% per year. However, the proposed budget has no increases for pension contributions. Furthermore, both of the city's pension funds assume returns in excess of realistic targets. Due to the aging of the US population and to other structural factors affecting the US economy, long-term real returns will likely average 5.75-6.75% rather than up to 7.75% (which is the current

[6] This claim is made in regards to the general fund.

assumed return for the Police & Fire fund).[7] At these more realistic rates of return, the city's pension funds would have an increased unfunded liability, and the city's annual actuarially recommended pension contributions would be several million dollars higher.

- **Pension Obligation Bonds**: The Mayor requests authorization for up to $250M in pension obligation bonds. There are both positives and negatives associated with POBs, and whether or not POBs make sense for New Haven depends on if (1) the city pays a low interest rate on the bonds; (2) the pension investments achieve market returns with low fees; (3) expected market returns are appreciably higher than the POB interest rates; and (4) POBs are cash flow positive for the city.

  Regarding (1): POBs are taxable bonds, so the interest rates we would pay are higher than for other municipal issuances. The city has estimated that the POBs would have an interest rate of 4.7%, but given the current interest rate environment the actual rate upon issuance may be 5.1-6.5%.

  Regarding (2): FRAC does not believe that our pension investments achieve market returns with low fees. The city's pensions are invested in expensive alternative funds, such as private equity funds and hedge funds. We believe that our pension funds should follow the example of the state pension funds[8] and put most if not all investments in low-cost index funds. Unfortunately FRAC has been unable to learn what fees our pension funds pay to their various advisers and fund managers[9], but we expect these fees to be 50 basis points or higher across our pension fund portfolio. Low-cost index funds would earn the city the same returns but at only 5-7 basis points, saving the city at least $1.6M (i.e. 43 basis points on the $400M currently invested) in fees every year.[10] Aside from fees, use of alternative investments is concerning because: (a) alternative investments are high risk, so they expose the city to the potential for significant losses, which would eventually have to be borne by the taxpayer; (b) there is no real-time market value for most alternative investments, so the city's valuation of its pension funds depends on estimates provided by managers of the alternative investments–which may be inaccurate; and (c) alternative investments require locking up city money with managers for long stretches of time, while index funds are fully liquid.[11] Illiquid pension funds are at risk of not being able to make required payments to retirees during a market

[7] Many state pension funds now assume a 7% return, and CT SERS uses 6.9%. Reasonable assumptions should also be made about other key pension metrics, such as inflation rates.
[8] Similarly, CalPERS and NYCERS adopted an investment policy in 2014 that precludes investments in hedge funds.
[9] Private equity and hedge funds have traditionally followed the "2-and-20" model, which means that they charge 2% (or 200 basis points) in management fees annually, and a further 20% of any returns.
[10] To put these fees into context, simply imagine that the city is able to issue POBs at 4.7%. Then the true effective interest rate would actually be 5.13%. That 0.43pp difference is the 43 basis points in fees that the city is paying to financial intermediaries who manage our pension funds.
[11] Lockup periods are usually 5-10 years. Pension funds with significant investments in alternative investments are called "illiquid."

downturn, or of having to sell positions at significant losses (a “firesale”) to meet cash flow needs.

Although major investors like Yale use alternative investments, the best academic research indicates–and the world’s smartest investors (like David Swenson) agree–that small pension systems like ours can’t achieve the returns that major investors achieve using alternative investments because we don’t have the level of investment expertise, access to the best investment funds (these alternative investments are extremely risky, and only the best ones make an investment return after accounting for risk and fees), nor access to liquidity (in case of a market downturn, Yale has over $2B it can access through lines of credit). Thus, pension funds like ours are best off investing in a diversified portfolio of low-cost index funds.

Regarding (3): As stated before, we believe that achievable real rates of return in our pension funds are 5.75-6.75%. For POBs to make sense for the city, expected returns should appreciably outpace the interest rates–this is because investment returns are risky while the interest rates are not (the interest must be paid). One can lower the aggregate risk by issuing smaller POBs over several years.

Regarding (4): Currently the city makes ARCs (annual required contributions) into its two pension funds. For POBs to make sense for the city, annual payments on the POBs (that is, annual principal + interest) plus any remaining ARCs (because the POBs will not fully fund the pensions) should be less than the ARCs if POBs were not issued. If this is true, then the city has achieved cash flow savings.

- **Medical and Self-Insurance**: Like other major employers, our city is self-insured for medical benefits–that means that, subject to employee cost-sharing (premiums, co-pays, etc.), the city pays the medical costs of our employees and their dependents.[12] In FY17-18 the city estimates that medical benefits will cost $125M with the city paying $90.4M, which is $13.7M above the originally budgeted amount. Additionally, the city has a negative fund balance in self-insurance of about $14M because the city went over its medical budget in prior years. Given the rate of medical inflation (which is 5-8% annually), we expect that the city will spend about $93-98M on medical next year. This compares to the requested budgeted amount of $76.7M.

- **Police and Fire**: The Mayor’s budget requests $300,000 less for Police in the next fiscal year than Police are expected to spend this year. Similarly, for the Fire Department the budget requests $500,000 less in the next fiscal year than Fire is expected to spend this year. In all reality, Police and Fire are likely to spend more than they spent this year, meaning that the Mayor’s budget is underestimating spending in these departments by a

[12] The city’s “insurer” provides the network and negotiated rates, but the city is responsible for paying medical costs.

total of $1-2M.

- **Debt Service**: The city is expected to pay principal and interest amounting to $67.2M. This compares to budgeted principal and interest costs of $66.4M in FY17-18. The city's debt service (e.g. the amount we pay on principal and interest on the city's debt) is increasing every year and is a major cost driver for the city. The Mayor's budget offsets the estimated $67.2M debt service with $9.25M in refunding, refinancing, and bond premiums.[13] While refunding and refinancing can be appropriate financial tools, in reality the city has used such tools to effectively use debt to pay for the city's operating costs.[14] Further, changes in tax laws and in the interest rate environment mean that this $9.25M in savings may not be achievable.

  The city's overall debt burden is $554.3M, and our average interest rate is 4.86%. Our city's debt burden was $522.4M at the end of FY16-17 and was $523.0M at the end of FY15-16.[15] Absent refunding, refinancing, and bond premiums, the city would be paying down about $41M in principal a year. Appropriating Ordinance #3 in the Mayor's proposed budget would authorize new borrowing of $67.5M (not including pension obligation bonds).

- **Revenue**: The city has suffered shortfalls in a number of revenue sources in FY17-18; projections as of January 31, 2018 indicate that revenue will come in under the original budget estimates by $21.2M. These revenue shortfalls are concentrated in three areas: the property tax initiative, state PILOTs, and the revenue initiative.[16] Revenue estimates in these categories in the proposed budget are much reduced, but they still exceed the

[13] Refunding and refinancing of municipal debt, also called restructuring, is similar to a mortgage refinancing. If interest rates have gone down, the city can achieve savings by restructuring debt and reissuing at a lower rate. However, most of the debt that was issued during the period of high interest rates before the Great Recession has already been restructured. Instead, in recent years the city has used advance refundings, which are a complex financial product that pre-pays bonds that are not yet callable. The new tax law disadvantages advance refundings, so this strategy is likely no longer feasible. Debt can sometimes be restructured to extend its maturity (like refinancing a 15-year mortgage into a 30-year mortgage) or to backload payments into later years (like an interest-only mortgage where for the first few years mortgage payments only cover interest costs but not principal); doing so will lower payments in the short-term (and thus result in cash flow savings) but will not result in true savings since interest rates will increase. A bond premium is when the city receives payments above par from investors who buy our bonds.

[14] A debt restructuring can result in cash flow savings, interest rate savings, or both. Unlike cash flow savings, interest rate savings put money back in the city's pocket since we will pay out less to bondholders over the life of the bond. However, interest rate savings should be realized as uniform savings over the life of the debt rather than applied to the current year's operating expenses. Similarly with bond premiums: since the city usually applies the excess payments from bond premiums to the general fund, this is tantamount to using debt to pay for operating expenses–note that accounting rules for private sector companies do not allow debt premiums to be used in this way.

[15] Because the $554.3M is not the debt burden at the end of FY17-18, it may not be directly comparable to the other values.

[16] The revenue initiative is defined as “additional State aid or revenue from other sources such as an increase in voluntary payments.”

projected levels from FY17-18. Furthermore, any increase in property tax rates is likely to increase delinquencies, so increased property taxes may not bring in the estimated amounts.

Conclusion

We know that Alders have many difficult decisions to make regarding the budget over the next few weeks, and we hope that this letter can help inform some of those decisions. We are willing to try to answer any further questions that Alders may have. Please email Mohit Agrawal at mohit.agrawal@yale.edu, who will then forward messages to all FRAC members.

Yours,

FRAC

Members:

MOHIT AGRAWAL
JAMES ALEXANDER
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Appendix A

We consider the estimates for budget balance in this letter to be conservative because (1) we haven't accounted for variances in some revenues, such as a likely increase in tax delinquency due to the increase in property tax rates; (2) we haven't accounted for variances in costs in departments other than those mentioned in this letter; (3) we haven't accounted for the risk of economic shocks, such as a downturn in property values in CT linked to the recently passed tax cuts; and (4) we have not recalculated what the city's pension obligations would be if the expected rate of return were lowered from 7.5-7.75% to 5.75-6.75%. All together, these factors could increase the budget deficit by more than $10M. On the other hand, the city has often found ways to reduce costs in certain departments during the fiscal year, particularly through vacancies. These cost savings can amount to the low millions of dollars.

Our estimate that the Mayor's budget could be $27-50.2M out of balance comes from:

- While the Mayor has requested a $5M increase in BOE funding, this increase is less than the BOE's current deficit. Given that costs are only likely to increase, we anticipate that the Mayor's proposal is $2-10M less than the BOE will actually spend.
- Assuming that the city does not issue POBs this year, we would expect that the city should make pension payments of $1-2M over the budgeted amount.
- This year's medical costs exceed the budget by $13.7M (after a one-time $9M adjustment, this is only about $4.7M). Given incessant growth in medical costs of 5-8%, we expect that that the city will spend $93-98M on medical vs. a budgeted $76.7M.
- As stated above, Police and Fire are likely to spend $1-2M over the Mayor's budgeted amount.
- The current debt service plan includes $9.25M in refinancing, refunding, and bond premiums. It unclear how much is a true saving and how much is simply capitalizing what should be an operating expense. We assume that $6-9M of this amount is not true savings.
- It is unclear how likely or whether the Mayor's Revenue Initiatives are to payoff for the city. Of the $6.1M that is envisioned, we estimate that $1-5M will not occur. Further, we estimate that $0-1.2M of the property tax initiative may be unrealized.

	Low Estimate of Variance	High Estimate of Variance
BOE	2	10
Pension Costs	1	2
Medical Costs	16	21
Police and Fire	1	2

Debt Service benefits in excess of value of interest rate savings	6	9
Property Tax and Revenue Initiatives	1	6.2
Total	$27M	$50.2M

Similarly, we believe that our estimates for the budget deficit in the current fiscal year are also conservative. Our estimate about this year's budget deficit of $34-54.6M comes from:

- The BOE has a projected deficit of $7M as of January 31, and the final deficit may range from $5-12M in the current fiscal year.
- Medical costs are projected to exceed the budget by $13.7M. The city has applied a one-time $9M adjustment to this figure[17], leaving a deficit of $4.7M. This is on top of prior deficits of $14M that have been accumulating from prior medical spending deficits. The final deficit may range from $4-6M.
- As of January 31, Police and Fire were running a projected combined deficit of over $4M, and the final deficit may range from $3-5M.
- The current budget uses $9.22M in premiums and refunding. We believe that between $6-9M of this does not reflect the present value of interest rate savings.
- Last year's Revenue Initiative of $18.6M has been unrealized to date, and we estimate that $15-18.6M will remain unrealized in FY17-18. Further, revenue from the Property Tax Initiative and state PILOTs will be $4-6M under the budgeted amount. However, city tax collection is running $2.1M ahead of estimates, and will likely end up $2-3M above the budgeted amount.

	Low Estimate of Variance	High Estimate of Variance
BOE	5	12
Medical Costs	4	6
Police and Fire	3	5
Debt Service benefits in excess of value of interest rate savings	6	9
Revenue	16	22.6
Total	$34M	$54.6M

[17] We have conservatively allocated this one-time adjustment to debt service to avoid double-counting.

Appendix B

In our review of the Mayor's budget request, we had several questions regarding certain budgeting assumptions:

- **Debt Service**: The budget assumes $4.25M in refunding/refinancing savings and another $5.0M in bond premium. How large an issue with what sort of maturity structure and interest rate(s) is planned for FY'19? Has the city come up with a work-around of the new tax law's general prohibition on muni advance refundings, will we be using current refunding, or will this issue (or one of its components) be taxable?
- **Medical Benefits**: Given that medical costs are increasing by 5-8% per year and that the city is running such a large deficit in medical in the current year, why has the budget for medical costs been held constant between this year and last year?
- This year's medical benefits costs are expected to exceed the budgeted amount by $13.7M. The city has applied a $9M one-time savings to this overage. Where did that savings come from? Was it from debt service?
- **Pensions**: The city's pension advisers H&H estimate that the actuarially required pension costs increase at about 3% a year. Why have pension payments been kept constant in the budget request?
- Why is the POB going to be invested into CERF rather than P&F? What actuarial assumptions regarding the different pension funds informed this decision, and how reasonable are those actuarial assumptions?
- **Revenue Initiative**: How successful is the current year's Revenue Initiative? How reasonable is the Revenue Initiative in the budget request?
- What is the property tax initiative?
- Similar to other businesses and governments, the city maintains tens of millions of dollars in various savings instruments (primarily money market accounts) across various banks. However, why is some of this money saved in zero or low-interest accounts, while other money is saved in high-interest accounts?