MEMORANDUM

To: Robin Crosbie

From: Water and Sewer Rate Advisory Task Force

Date: May 15, 2008

Re: 2009 Water and Sewer Rate Structure

Introduction

The charge to the Water and Sewer Rate advisory Task force (the "Task Force") is threefold:

1. To make recommendations to the Town Manager, for presentation to the Select Board, on water and sewer rates for fiscal year 2009 and beyond, with focus on a rate structure that can be sustained and annually modified to meet budgetary and capital obligations, and meet reserve targets;
2. To recommend a reserve target for water and sewer reserves; and,
3. To make recommendations on funding mechanisms or strategies for water and sewer capital improvements.

This memorandum deals with the first item regarding the water and sewer rates, but only respecting those for fiscal year 2009. The Task Force felt that this was the immediate challenge, since the 2009 water and sewer budgets have already been approved by the Select Board and Town Meeting. Those budgets provide for a 17% increase over the Fiscal year 2008 budgets, bringing the total budget for that year to approximately $3.55 million.

The Select Board, acting in its capacity as the town's Water and Sewer Commission, will have to approve and implement revised water and sewer rates that will reflect the reality of the Fiscal Year 2009 budgets prior to the July 1 starting date for the year. With the approval of the 2009 budgets, water and sewer rates will have to be increased to cover the budgets. Notwithstanding the focus on fiscal year 2009 rates, the Task Force feels that the discussion below presents a rational and financial well--grounded framework for water and sewer rates both for fiscal year 2009 and for future years.

Task force recommendations

The recommendations of the Task Force regarding water and sewer rates for fiscal year 2009 July 1 are as follows:

1. That the Select Board, in its capacity as the town's Water and Sewer Commission, adopt the new methodology for determining water and sewer rates outlined in this memorandum;

2. Using that methodology, the Select Board, in its capacity as the town's Water and Sewer Commission, adopt rates for Water and Sewer use for the fiscal year 2009 beginning July 1, as follows: (i) a flat charge of $90 per residential household per quarter to be billed and payable on the same schedule as property taxes, plus (ii) a variable charge to each residential household to be billed and payable semi-annually of $2.00 per metered unit of water used; and,

3. That the Select Board authorize the Task Force to initiate a program to educate the town's residents on the new methodology and rate setting process. The program should include a discussion of the financial requirements of the town's water and sewer system.

Overview and General Conclusions

The town's water and sewer operations are not profit centers. Rather, the budgets for these operations reflect only the actual costs of meeting the many obligations, demands and mandates on the town's water and sewer systems consistent with the health and safety and expectations of the town's residents. As will be seen, some of these obligations, demands and mandates, such as the repair and maintenance of the town's water mains, sewers, drainage pipes and culverts, hydrants and other infrastructure, are within the town's control. Others, including federal and state regulations regarding water and sewer and the cost of water and sewage treatment provided by Springfield are not.

The bottom line is that there is no free lunch. The town in each fiscal year must raise and appropriate sufficient revenues to meet its budgets for its water and sewer operations. Deficit financing is not an option.

By all objective measures, costs and water and sewer charges are going to continue to rise. The town's current rate setting methodology appears to yield inequitable results in the water and sewer rates being charged the town's rate payers. The challenge to the town is to manage its water and sewer operations at reasonable costs, consistent with the above obligations, demands and mandates, while charging rates for the operations that are fair and equitable to all the town's ratepayers. The process of setting the rates must also be open and transparent to the town's residents so that they can have confidence that a proper job is being done in maintaining the system and setting rates.

Preliminary Information on Longmeadow Rates

Prior to proceeding with the full discussion of rate issues, the Task Force thought it would be helpful to provide the following information regarding Longmeadow's relative ranking of its water and sewer rates versus other communities in the Commonwealth. Recent increases in the town's water and sewer rates with more increases to follow, understandably, have been a cause of concern to many town residents. Longmeadow residents, however, have been fortunate in being able to enjoy among the lowest water and sewer rates relative to other communities for many years, although this is both a blessing and a cause now for increasing system maintenance costs.

In in fiscal year 2007, out of 286 Water Districts in Massachusetts, Longmeadow was 14th lowest in average household annual water bills. Note that we are at that low rate level even including the perceived high usage for irrigation. Even with all the water we use (and Longmeadow users are high on a per person basis), the town's billing rate for these services was the 14th lowest in the state. We believe this reflects, in part, the fact that the town's water and sewer system has been fully built out for some years. The low rate also reflects the reality that previous town's budgets have been inadequate to properly maintain the water and sewer systems.

Types of Services Delivered

The Town of Longmeadow delivers to our residents two major categories of services within our water and sewer structure.

A. Capacity Services: First, the town delivers to every home and business (ignoring some very minor exceptions) capacity for water delivery and waste water removal; let's refer to this as the "Capacity^ Services." These are provided through the operation of our Water and Sewer Departments within the Department of Public Works. They include the installation and maintenance of infrastructure (water and sewer mains, culverts, fire hydrants, meters, water tower and so on).

Capacity services are a public good, much the same as the delivery of police protection, driveable roadways, and educational services. Capacity services are provided to the townspeople without regard to their utilization of those services. That is to say, they are available to everyone, with no differentiation as to their utilization by citizens of the town. Every user must have available to their property hookups to sewer and water pipes, infrastructure for actual water use, as well as hydrant availability for fire protection, all without regard to how much or how little demand the user places on the system.

B. Delivery Services: In addition, the Water and Sewer Departments arrange for and provide the actual delivery of clean water and the removal and treatment of waste water from the residents and commercial users (again, ignoring some very minor exceptions). Water and waste treatment services are purchased from the City of Springfield (with waste treatment provided by the facilities at Bondi's Island). The Town attempts to monitor the usage of these two services via the use of water meters, and bill according to the individual usage of these services. Let's call these services "Delivery ^ Services" (delivery of clean water, and delivery of waste water treatment).

Need For Adequate and Fair Rate Structure

Background

There has been much consternation over the last several years, and particularly the most recent year, over the determination of the charges to users of the Water and Sewer services. There is a growing recognition by the Town that the town has underfunded the infrastructure needs of the system for many years. Objective outside consultant studies and the investigations and daily experience of town employees working in the Water and

Sewer Departments confirm the need for increased infrastructure repair, maintenance and, in some cases, replacement. There exists an absolute requirement to increase water and sewer revenues to pay for the infrastructure needs of the system, before catastrophic failures of the system become commonplace.

The residents and taxpayers of the Town will not accept a Water and Sewer system that cannot deliver the services expected. Our political leaders are cognizant of the need to make sure that, while basically invisible to the average resident/taxpayer, the water and sewer systems must be maintained to a high degree of performance, and controlled investment in infrastructure must be planned and accomplished in such a way as to ensure the viability of both our capacity and delivery services.

However, the Town must also have a rate structure that is perceived as "fair" in determining who should pay what for this service. The most recent "taxpayer revolt" was, in our opinion, not only the result of the sharp increases in water and sewer bills, but also a result of a perceived lack of fairness in the determination of the applicable charges for water and sewer services. We believe that the residents and taxpayers in Longmeadow are reasonable people who will understand and accept the need for investment in our capacity and delivery services, and will be willing to make that commitment. The Task Force also believes that, given the opportunity to understand the rationale, they will support a new rate framework and structure that is fairer and more equitable to all than the current system, and that is grounded in financial fact.

To this end, we will now examine our current rate system. We will talk about "homes", but understand that we will also include the commercial and institutional customers of the system in any ultimate rate structure program. When necessary, we will differentiate those customers from the residential customers. Residential customers are approximately 5500 in number, while we have only 80 commercial accounts and 51 institutional accounts.

Also, recall that this memorandum is looking only at our rates for the fiscal year 2009. The task force intends to continue its study of the rate system as well as the capital infrastructure needs for the entire water and sewer system, and will make more comprehensive suggestions with regard to a long term plan for meeting the system's long term needs for capital improvements, repairs and maintenance and establishment of reserve policies. We also will be looking at the advisability and legality of combining water and sewer (that is, collapsing it into a single budget that covers Water & Sewer). Obviously, additional repairs and maintenance and capital improvements beyond what is already included in the annual budget will have to be paid with additional funds raised from the ratepayers or taxpayers, and we will be looking at the various options that are open to us for that analysis.

Current rate system

Longmeadow's current water and sewer rate system relies on a single meter in each home. That meter records *only* the incoming utilization of water. There is no metering

system for wastewater leaving the home on an individual basis. So, over the years, a rate structure has been developed that makes certain assumptions about how much of the metered water that arrives at each home is thereafter removed for treatment by the Sewer system. Ratepayers are billed on the basis of water metered and a sewer charge that is related to metered water usage. There is, in fact, however, not an equivalency between water metered and wastewater for all ratepayers, i.e. less wastewater is removed than water coming in to a ratepayer's home.

What happens to the difference between what is metered and what is assumed to be wastewater? Well, that is the water that we ***assume*** to be used for irrigation. The rate system charges a cost per unit of water that is much higher for a unit of water that is subject to water ***and*** sewer rates than is charged for a unit of water that is just subject to the water rate (the water that we assume is irrigation water going back into the ground and not into the sewer system). The Town uses a rate structure that measures "units" of water where a single unit is equal to ***one hundred cubic feet*** (which is equivalent to 748 gallons) and deals with concerns about sewer charges by imposing a rate cap (capping the amount of metered water usage that is used to fix a users sewer charges).

This current structure, we believe, is one of the primary sources of frustration within the Town over the rates. The current structure produces a desire among ratepayers for maximizing the amount of water that is exempted from sewage charges. The current structure is the ***only reason*** that there has been a continued hue and cry from a number of townspeople for the opportunity to have a separate irrigation water meter. This would allow them to ***prove*** that they are being ***overcharged*** for their sewer treatments. Based on the rate analysis used for the EarthTech Study in 2007, less than 20% of the ratepayers exceed the current 220 unit cap (110 unit per billing period) where the exemption for sewer charges kicks in, while approximately 35% would be benefited by a 150 unit annual cap.

The current rate structure also places the town's ratepayer's focus on water utilization to the exclusion of the cost of capacity service. This errant focus diverts the attention of the ratepayers from the daily cost of maintaining the water and sewer infrastructure for each of those ratepayers. That cost goes on whether the ratepayer uses 1 unit, 110 units or 1000 units of water in a billing period. Water usage bears no relationship to the cost of capacity service. Many ratepayers, however, labor under the misimpression that water usage alone should determine the amount of their water and sewer bills. They do not appreciate the fact that maintenance and repair of capacity service and costs beyond the control of the town (such as the price of water purchased from Springfield, Bondi's Island sewage treatment charges and federal and state regulations) account for a substantial portion of their water and sewer bills.

<u>Perverse incentives</u>

Since we have a metering system that ***cannot*** determine the actual usage of sewer services, we have a built in incentive for those who consider themselves overcharged for sewer service to avoid such overcharge by either lobbying for separate irrigation meters or, as many have done, having their own well installed for purposes of irrigation.

However, those who might be *undercharged* for sewer services to their home by reason of the artificial cap we have on sewer rates (the idea being that "no one could be using that much sewage service") have absolutely no incentive to make sure they are properly charged and incur a higher bill. Thus, our current system of not being able to determine the exact usage for sewer service results in the inevitable situation that some ratepayers are subsidizing other rate payers, without actually knowing who is being subsidized and who is doing the subsidizing, and those who believe they are doing the subsidizing are unhappy and looking for ways to eliminate that subsidy.

It should be noted that as users who actually are subsidizing the system (because of high irrigation use and low sewage use) remove some or all of their use from the system by installing their own wells, the rate payers left behind will face increasing charges since the non-variable costs in the budget (that is, the costs other than water purchase and treatment costs) must still be paid, and will be spread over a smaller base. As an operating business, we actually want to *encourage* water users to buy *all* of their water from the department as there is a positive revenue result from each unit of water sold (that is, we sell each unit of water for an amount that is more than our marginal cost for purchasing that unit).

One other inevitable result of our current rate structure is that there are users that are considered "low usage" that are paying charges for the system that do not realistically reflect the cost of providing capacity service to their home. There is a substantial infrastructure cost associated with the delivery of that first gallon of water and sewer service to every user. When the charges are based only on usage, however, the low usage customer likely may not appreciate the fact that they are not paying their appropriate cost and that the result is a subsidy from the other ratepayers for the low usage customer. This is a different kind of subsidy that needs to be addressed.

Possible solution

One possible solution to the first "subsidy" problem would be to install irrigation water meters, and there has been significant clamor for such an option over the years. Even assuming that such meters were installed at the option of and cost to the homeowner, it does not solve the structural problem. Unless *every* home that used water for irrigation had the dual meter set up, we would still have some homeowners subsidizing other homeowners, since it is the artificial cap on sewage use that is really the culprit. If every home had dual meters, the cap on sewage would become unnecessary and would be eliminated. However, even dual meters would *not* eliminate the need to have a rate structure that differentiated between the amount of water that is used by the ratepayer (one fee) and the amount of waste water subject to treatment (another fee). We believe there is another approach to the problem that is a better solution and we outline that below.

A better solution

At this point, let us limit our consideration of possible solutions as they relate to residential users. We will of course include any non-residential ratepayers in our

ultimate design, but it will make sense to consider non-residential users separately. The non-residential users are a small percentage of our users and the following recommendations will encompass well over 90% of our user base; we will deal with the non-residential users later.

Let us make two *fundamental* assumptions. First, the provision of water and sewer *service* (capacity service) to each home/business location is a fundamental Town service that must be provided to each location regardless of usage**.** The costs of providing that capacity service should be appropriately included in the rates paid by each user. Just as the police services or school services are provided for those who require them but paid for by all taxpayers, so should capacity service be considered and delivered. We should also make the point here that the design of the water system is based *not* on the expected need for water, but on the basics of fire protection principles. Thus, it is simply not true that a so-called "large" user of water needs more infrastructure (larger pipes) than a normal residence. It is the fire suppression needs that drive the design of the infrastructure.

The second fundamental assumption is that the variable input that ratepayers do have some significant control over is the amount of water that they use for irrigation, and that it is not the responsibility of the Town to provide irrigation water without being appropriately reimbursed for the cost of providing that water to the user.

There is a third set of assumptions that we will make for the purpose of developing this rate proposal: the average home in Longmeadow requires a certain amount of waste water treatment, such usage is based mostly on the number of people occupying the home, and the variability of such usage among similarly occupied homes does not vary by a very large degree based on the size of the residential unit. Therefore, we will make the determination that our rate structure should recognize that the vast majority of homes will require an amount of waste water treatment that does not differ from other homes of the same occupancy, and that waste water treatment service can and should be covered in the rate structure without requiring a variable factor. In other words, we will eliminate the sewer cap that is the proximate cause of the widespread rate "unhappiness" for many residents in **t**own. We do acknowledge that there will be "outliers", such as residents who leave their home unoccupied for substantial lengths of time while occupying another residence in another location, for whom the above assumption might not be correct. Nonetheless, we believe the proposal below properly includes those situations in its scope.

Where does that leave us?

What is needed and what the Task Force recommends is a restructuring of the water and sewer rates to reflect financial and user realities and equities.

The most significant variable item**s** in the Water and Sewer budgets **are** the purchase of water and the purchase of waste treatment services. The amount of water used at each

home is a significant variable predicated on a number of factors, but irrigation usage is probably the largest controllable factor.

As noted above, however, regardless of how much water is actually used by system users, there still are substantial costs that must be incurred for the capacity service. This cost is basically a "flat rate" item. Just as the funding for schools or police protection are "flat rate" items in the annual Town budget (with the flat rate being added to the mill rate based on property assessment), the flat rate for capacity service (which includes waste water treatment) can be determined and billed to each home (on a per user basis). In addition, each user would incur separately broken out charges for actual water usage on a metered basis.

With this methodology, the need for secondary meters for irritation *disappears completely!* There is no need for a second meter when charges for sewage treatment are decoupled from water usage and included in a separate charge as an element of capacity services). **I**ndividual homes (and businesses) will now pay their appropriate share of the cost of capacity service; the previous rate structures did not derive adequate revenue for the service provided (capacity service) to low users. For example, we do not believe it is appropriate for a home that is connected to the water and sewer system but is only occupied for several months during the year not to pay its share of the fixed costs of providing that capacity service to the dwelling. The cost to provide capacity service goes on whether or not the home is occupied. Our current and previous rate structures subsidize those homes that have low utilization, *even though capacity service costs of providing the first gallon of water and sewage treatment are substantial*. There is no justification for this subsidy by other ratepayers; it is an inherent unfairness and should be eliminated.

So, what would a rate structure look like under this methodology?

Our basic recommendation is a bifurcated rate structure consisting of a flat charge for capacity services and a variable charge based upon metered water usage is the most appropriate one to meet the objectives of fairness to all ratepayers and adequate revenues to meet the needs of the system. We will also provide alternative examples so that you can determine the interplay between the two fundamental parts of the rate structure. It is possible to combine these two pieces in many ways to produce varied results, all of which will produce the needed revenue to meet the expenses budgeted.

Quarterly billing should be implemented immediately

First, we recommend that the town move to quarterly bills, even before we have quarterly readings with replacement radio meters. (Please reference our previous request to move forward as soon as possible with the implementation of radio meters to allow for more control over the meter reading, the costs thereof and the billing process). At this point, the Town would still provide semi-annual meter readings until we had the radio meters installed to allow full quarterly billings. Prior to that time, however, the town should commence quarterly billing for the capacity service flat charge (see below), but bill for

the metered water usage only on the semi-annual bills. Ultimately, metered water usage would also be included in the quarterly bills. We believe that this would make it easier for people to pay their bills, as was the case when the Town switched from semi-annual to quarterly billing for real estate taxes.

Determination of the flat charge

The flat charge should be both reasonable and appropriate (the *right* amount to cover the costs intended). The challenge is to determine what should be a reasonable flat rate charge. We started with an almost arbitrary $1 a day cost for analysis and comparison purpose. We asked ourselves: is $1 a day too much to expect to pay for the *provision* of the infrastructure to provide clean water and waste treatment at your home? We felt that the $1 per day was a fee that was a reasonable place to start our analysis. Fleshing it out a little more, and converting to a quarterly amount, we considered a quarterly flat fee of $90 per quarter (which is just slightly less than $1 per day). That leaves the issue of appropriateness; is the flat fee adequate to cover the infrastructure costs, or is it too high or too low?

What should the flat charge cover?

The next question is "what should that daily cost include"? First, it should include the capacity services. Even if a home is unoccupied for the year, the infrastructure costs to be able to deliver water and sewer services do not go away. The daily charge needs to cover the capacity service costs. In addition, looking back at our second fundamental assumption above, the daily charge should also include some or all of the cost of waste-water treatment, if we are to treat it conceptually similar to other town services noted previously (school, police, etc).

What is covered by the variable (or usage) charge?

If the daily charge includes the infrastructure and some or all of the waste water treatment costs, what else is left to be covered by the charge for water used? What's left is easy to say: it's the *rest of the budget*.

First analysis method

Thus, a daily charge of $1/day ($90 quarter), multiplied by our approximately 5500 residential users will produce approximately $1,980,000 in revenue (5500 x $360). This does not include the commercial and institutional users (approximately 80 + 51 = 131 additional) who would also be paying fees (to be determined). The total sewer budget approved is $1,920,756. As it happens, this cost structure will (fortuitously and serendipitously) cover the complete sewer expense of the budget (with about $60,000 left over). (Following this analysis, we will provide another alternative analysis - another way of looking at the same issue).

Having raised the $1.98 million from the flat charge, we still need to raise revenue to cover the water expense of the budget (minus the approx $60k excess raised over the

sewer cost). This comes to $1.627 million (water budget) minus $60k = $1.567 million. If we assume this $1.567 million to be raised by water charges to users, we divide by our estimated billable units of 865,000 for a rate per unit of $1.82. Also note that the estimated billable units includes *all* ratepayers, including commercial and institutional). If we make the usage rate a flat $2.00, we will have $163,000 that we can add to reserves PLUS the amount billed to commercial and institutional users for their flat charge; if we assume the same $360 per user, that would produce another approximately $47,000, for a surplus of approximately $210,000. This $210,000 could be simply added to reserves, and perhaps also help to keep rates stable over a longer period of time.

Second analysis method - same rate structure

Alternative analysis two; an alternative way to look at the revenue and budget:

Total water and sewer budget is approximately $3.55 million.
Flat rate of $90/quarter times 5630 (residential plus all others) = $2.03 million
865,000 billable units by 2.00 per unit = $1.73 million
TOTAL REVENUE = $3.76 million
Contribution to reserves: $210,000

Is the rate structure fair?

Alternative analysis three; and possibly the most important:

The total water and sewer budget is approximately $3.55 million.

The cost to the Town for water (paid to Springfield) is $675,000; the cost to the Town of waste water treatment (paid to Springfield) is $789,000. Thus, the total cost for water and sewage treatment in the budget is $1.464 million.

That leaves a balance for the water and sewer budget of approximately $2.084 million (after the cost of water and sewage treatment).

We believe that this $2.084 million should be considered the true “fixed costs” of the budget.

The revenue that is raised by the $90 flat rate is approximately $2.03 million. You will note that the $90 flat rate almost (but not quite) covers the fixed costs of the budget. Even at $90, there is a small subsidy provided by the variable rate.

Alternative rate calculation; phase-in of flat rate

The Selectboard will have to ultimately determine the rate structure to be charged for the 08/09 year. Though the task force believes that the $90 per quarter /$2.00 unit rate schedule is the most appropriate from an overall fairness basis for all Longmeadow ratepayers, we have included an alternative calculation so that you have an idea of what

happens to the rate structure as you change the two pricing elements (the flat rate and the rate per unit).

The task force believes we should get to the full flat rate (the $90 flat rate in our example) as soon as possible. However, if it were decided to use a phased approach to moving to the $90 flat rate (say, over two years), then a lower flat rate could be adopted for this year (say, $50/quarter) with a required higher rate per unit. Below are the effects of such a rate structure.

Total water and sewer budget is approximately $3.55 million.
Flat rate of $50/quarter times 5630 (residential plus all others) = $1.126 million
865,000 billable units by $2.90 per unit = $2.5085 million
TOTAL REVENUE = $3.6345 million
Contribution to reserves: $84,500

NOTE: if the usage rate is increased, the contribution to reserves will increase. Every one cent increase should produce $8,650 of additional revenue if the estimated billable units holds true.

Alternative rate calculation: inclusion of minimum number of units in flat rate

While it is quite possible to come up with many different combinations of flat rate and unit rate, an additional modification can be introduced into the price structure. This would be the possibility of including a minimum number of units of usage within the flat rate. For example, the flat rate of $90 per quarter could include a minimum usage of 5 or 10 units per quarter that would not result in any additional billing beyond the flat rate. The inclusion of a minimum number of units for which no additional billing would occur would necessitate a higher variable rate per unit.

For example,. if we include 5 units per quarter (and, for ease of calculation, assume that every ratepayer uses at least that much water each quarter), that means that we will have to raise the unit cost in that case to $2.30 from the previously calculated $2.00.. If we included 10 units per quarter, the unit cost would have to go to $2.70.

Current Rate Schedule vs. Recommended Rate Schedule

For comparison purpose, we felt it would be useful to include the most current rate schedule (the one adopted for purposes of the refund calculations), and what the rate schedule would have to be under that same scenario to cover the new budget.

Current Rate Schedule: The “refund rate schedule” is $2.05 per unit for sewer, with a cap of 110 units per billing period (220 per year). The water rate is $1.70. NOTE: just for clarification, that means that the rate on the first 110 units of usage (combined water and sewer) is $3.75 per unit, with any additional units billed at the $1.70 rate. The effect of the refund rate schedule was to significantly underfund the revenue side of the budget for fiscal year 2008, with the revenue needed to balance the budget taken from reserves.

Fiscal Year 2009 Schedule if Current Rate Setting Structure Used : If the refund rate schedule is simply adjusted to cover the increase in the budget, the rates would go up as follows: The sewer rate would be $2.50 (same cap), and the water rate would be $1.86. Again, that means that the rate for the first 110 units of usage (water and sewer combined) is $4.36 per unit, with any additional units billed at the $1.86 rate.

Attached Exhibit

Please see the attached exhibit for some graphic examples of these rate calculations. Page 1 is the exhibit showing the various results of the different rate structures and how many users would fall in each group measured in increases of 50 HCF. Page 2 illustrates what percentage of the total revenue stream is attached to the various levels of usage. We note that very little of the total revenue comes from high end users (in the non-tiered cases). In fact, looking at the $200 flat rate ($50 quarterly alternative), we see that the vast majority of users are not materially affected by that change in the rate structure (though we still are recommending a move to the $90 quarterly rate - over time perhaps). Page 3 shows the revenue structures

We are available to help

The members of the Task Force are available for consultation and explanation of this material. Please let us know how we can be of help.