TO: Chatham Board of Selectmen

FROM: Robert J. Ciolek

DATE: April 30th, 2011

RE: Financial Review of Comprehensive Wastewater Management Plan – Chatham

The following material addresses the questions posed by the Chatham Board of Selectmen in October, 2010. The Board's questions are stated in bold print, followed by an analysis of the questions.

1. Verify if total projected cost of $210 million for Phase I of CWMP is still accurate. Does cost include and or reflect:

a. SRF 2% State Revolving Fund (SRF) loan?
b. Grants from Federal Stimulus Program?
c. USDA Rural Utilities Program grants and low-interest loan package?
d. Is interest included in the projected cost? At what rate? Is that valid?
e. Was there a sufficient inflationary factor built into the projections?

Discussion:

The projected cost of $210 million is a calculation from engineering cost estimates found in Table 11-1 of the Comprehensive Wastewater Management Plan (CWMP) for the Town of Chatham. The table estimates $170 million for **Phase 1** collection system design and construction and $40 million for Wastewater Treatment Facilities (WWTF) Phase 1 design and construction. The amount does not, of course, include the cost of operations and maintenance (O & M) and are based on May 2007 cost data. The table aggressively rounds off figures which should be corrected and made more accurate in later versions of any published capital cost estimates. All cost projections of this nature are the product of a series of engineering assumptions and while those assumptions may be "tested", it is the passage of time that will be the true measure of their accuracy. And, as they are simply assumptions that may change it is important for the Board of Selectmen to closely monitor actual costs and progress in executing the wastewater capital program.

Is this construction estimate accurate? It is only possible to answer that question in the following manner: this review has uncovered no indication that the engineering cost estimate for construction-related expenses is incorrect. Indeed, the first project to be publicly bid resulted in a construction contract less than the original engineer's estimate. However, it would be premature to conclude that this first sewer construction contract is a harbinger of perpetual good news. The first contract pricing was likely a reflection of the current economy and projecting similar pricing discounts over the very long time frame of the wastewater capital program would be a mistake. Some of the numbers contained in the February, 2010 presentation to the Board of Selectmen do presume a continuation of similar pricing discounts (see slides 12 – 14). While no one can accurately project the future, over the course of such a lengthy project the bidding environment will fluctuate to both the benefit and detriment of the Town.

The financial plan presumes, however, that the Town of Chatham will continually receive low-

interest loans from the Statewide Revolving Loan Fund (SRF) plus certain federal grants and loans (ARRA funding and USDA grants and loans). The presentation in February 2010 presumes the use of a series of SRF loans for the bulk of the capital cost of the program, from either the new 0% loan program or the more traditional 2% SRF loan. Indeed, in the Commonwealth's 2009 Intended Use Plan (IUP) for the SRF loan program, Chatham was identified as a community eligible for a 2%, $55.6 loan for the planned upgrade of the WWTF and for sewer extension work, although the Town subsequently modified and reduced its loan amount application to $12.2 million. Chatham has also received a USDA funding commitment in the amount of a $17.8 million grant and a $21.6 million loan. The interest on the loan is 3.25%.

It is overly optimistic, though, to assume that the Commonwealth's low interest loan programs will uniformly be available for a program of this size and duration, even if eligible for loan funding. While it is reasonable to presume that some, likely substantial, low interest funding will be available in the future (assuming the Commonwealth maintains the program at current funding levels) a significant number of applications for loans are not funded each year due to the lack of availability of funds or the specific nature of the project funding request. A more conservative and arguably more accurate projection should assume a blend of low interest loans and traditional tax-exempt debt financing. The blending of the two types of financing would result in a marginally higher interest rate, and I would suggest that an assumed interest rate of 3% be used for planning purposes. Even that estimate may turn out to be optimistic in view of recent stories predicting greater limits on the availability of low-interest loans and with respect to the few remaining federal grant programs as well as proposals to end the tax advantages associated with government bonds. Clearly, monitoring interest rate trends is an issue for the Board of Selectmen and town management.

While the engineering construction cost estimate does not include interest, the February 2010 presentation does set forth an estimate of between $62 to $80 million in interest expense, the first assuming a blend of 0% and 2% interest rates, the latter a 2% rate. The presentation infers that the $80 million number is a preferred estimate and adds it to the cost of the program.[1] If one presumes a blended 3% rate, as suggested above, the interest cost would increase by approximately another $40 million over the life of the program. Thus, I would suggest modifying an initial Phase 1 total capital cost estimate of $290 million to at least $330 million.

The original cost estimate also does not take into account inflation after 2007. The presentation does not inflate future revenue estimates as well. Facilities planning studies often exclude inflation when doing projected rate analyses, as stakeholders typically are comparing the projected bills over a 20-year period to their current household incomes. But, when developing rates and charges that address the actual rates that need to be adopted within a narrower time window (typically 1-5 years), the norm is to include inflation in the analysis in order to avoid shortfalls that would result from not addressing real price increases. As the project moves forward

[1] The February presentation reduces the engineering cost estimate of $210 million by the estimated savings from the first construction contract as well as the probable receipt of the federal USDA grant. It then proceeds to add back in an interest cost estimate of $80 million. Better, in my judgment, to consistently and only show the original cost estimate and whatever interest estimate decided upon in order to fairly present the numbers. Presumed future savings or presumed grant funding do not reduce the *original* estimated costs.

and matures, the Board of Selectmen may wish to periodically ask for a reformulation of the initial presentation using updated Engineering News Record inflation indices to accomplish this result.[2]

2. Verify if the basic assumptions for financing the plan are valid and sufficient to fund the project. The sources of income are identified as:

a. Property taxes
b. Increased sewer revenues
c. Debt drop off plus over/under offset

Discussion:

I reviewed the material contained in the February 2010 presentation and discussed revenue estimates during our meeting. The revenue estimates are logically consistent with the cost assumptions contained in the earlier presentation. However, as noted in the previous section, if one assumes an increase in interest expense (or, of course, any other increase in cost estimates), there will of necessity be a need to be a concomitant increase in matching revenue.

Repayment of SRF loans are limited to 30 years by federal rule, so any financing using the extended terms provided for in the state legislation permitting 0% interest could not entirely rely on the SRF at either 2% or 0%. Further, the availability of the 0% loan program is recent and no community on Cape Cod has yet taken advantage of the program. While the program may be advantageous, as of this writing final regulations setting forth municipal obligations associated with the new loan program are yet to be adopted by the Commonwealth, thus leaving communities in the dark with respect to the important "fine print" of its loan obligations. In addition, to the extent that the Town chooses to self-finance a portion of the capital expense, the typical length of long term tax-exempt debt typically ranges from 20 to 30 years. All of the debt service payments from the various sources of funding will be blended and revenue requirements to pay debt service needs to be calculated annually. It is certain that various loan or debt obligations will be entered into over time; thus, debt service obligations entered into now will be paid over the next 20 years or so and debt entered into 20 years from now will payment obligations for another 20 years or so beyond that future date. In short, it is instructive to think of this extensive capital program as one which requires matching revenue for 40 to 50 years.[3] Payment of debt service can be from a number of sources: property tax revenue paid by property owners, rate revenue paid by customers of the system, or some combination of the two. Some communities also charge betterments, though that is not anticipated in Chatham.

---

[2] The engineering estimates by Stearns & Wheler are also clear on this point. Footnote 1 to Table 9-1 (Town-wide Sewer Costs) states that "(c)osts are referenced to construction in March 2006 based on Engineering News Record (ENR) index 7692, **except** final total (May 2007 ENR Index 7942). Costs must be increased by a ratio of the appropriate ENR indices for construction in subsequent years.

[3] In addition, as soon as a capital asset is acquired it begins to depreciate and will require capital replacement and repair. Thus, it is fair to assume that over time additional capital costs will be incurred in order to properly maintain the system. It needs to be remembered that the original sewer system in the Town of Chatham is roughly 40 years old and will require gradual repair or replacement at some point. Finally, while precise costs cannot be calculated it is highly likely that future anticipated wastewater regulations and practices will require system enhancements which, in turn, will drive new capital and operating costs. None of these costs are, or reasonably can be, captured in anyone's current estimates.

As suggested by the question, there are distinct and important differences between the potential sources of revenue. Property taxes are paid by all property owners based upon property valuation. Wastewater rate revenue is usually paid on a per account basis (usually via water meter readings) and are usually based on adjusted water usage. There are a range of rate policies (such as low income discounts, for example) which, after review and public hearing, might impact the rate structure used by the Town as well as the precise amounts paid by residential or commercial property owners. Pragmatically, once a robust municipal wastewater utility has been created with a significant rate base, revenue flexibility is assured. System rates and charges will rise as dictated by system operating needs and debt service contracts. However, caution must be used in setting user charges. Such charges are established and collected not to raise revenues but to compensate the Town of Chatham for providing wastewater utility services. As a general rule the establishment of such charges should match the cost of the service and not exceed it. A financing plan that presumes "excess" rate revenue should be reviewed by counsel prior to its adoption.

As noted, the program will annually raise sufficient revenue to pay for system operating expenses. Operating expenses will ramp up over time as the wastewater treatment plant comes on line and as more and more properties connect to the system as a result of the staggered sewer installation program. Connection driven system expenses and commensurate revenue needs will ramp up at a rate that is directly related to hookups. Viewed as a graph, connection driven expenses will look like a series of steps over time. The ramping up of expenses will, however, show a significant plateau when the plant commences operation. These differing cost and revenue patterns will need to be taken into consideration in terms of rate revenue planning.

As explained by staff to the Board of Selectmen in February, the expected property tax revenue is the product of what is termed the "over/under offset" associated with the Town's current capital budget and program. Simply put, as current capital debt service is paid, the money will be then "repurposed" at future Town meetings to pay for future wastewater debt obligations. It is impossible for anyone to guarantee that this strategy will work over the next 40 to 50 years as it presumes two things: (a) the avoidance of any competing capital projects of significant size and (b) rigid fiscal discipline. It is fair to conclude that it is a sound funding approach for the short and perhaps intermediate term as it was asserted to me that Chatham has no other major capital programs on the horizon. Whether it remains an optimal funding choice over a lengthy period of time is uncertain.

A final note. Given the uneven rates of capital and operating cost increases and corresponding uneven increase in a customer ratepayer base (cost plateauing caused by the WWTF; step up of customer revenue base), the February 2010 prediction of $60,000 per parcel cost and an average of $1,200 per year per parcel is not likely to be true, though it is a broadly fair perspective when looked at from a 2010 perspective. The variations in revenue need from year to year will reflect the jaggedness of plateau/step-up reality of creating the system rather than averaging out the numbers over 50 years. Precise projections related to property taxes or rate increases are instructive, but each year going forward will require actively managing revenue availability with actual obligations. More on this issue in the response to BOS question 10.

3. Is it possible to sustain the debt drop-off practice of helping to fund the CWMP over the 20-year period of Phase I?

See preceding discussion.

4. Are the financial cost projections for individual homeowner accurate?

a. Of the various options shown on the tables that calculate individual homeowner costs, which are most accurate at this time?
b. Has an inflationary factor been built in to all the various options? What rate is used?
c. Should hook-up costs and increased sewer service fee be included in the "true" cost to the homeowner?

Discussion:

As to question (a) please see, in part, the preceding discussion as well as the analysis contained in response to BOS question number 10.

On question (b), as previously noted, inflation has not been taken into consideration.

The third question depends upon perspective, but from the viewpoint of the Town the answer is "no" except for the Town-assumed cost of purchasing and installing grinder pumps as part of the process of connecting homes to sewer lines. As the Town has made a policy decision to include that cost in the Town's capital program it should be recognized by the Town as its obligation. The cost of the grinder pumps are included in the February presentation.

As to the "true" cost to the homeowner, such expenses are justifiably *not* part of the Town's capital program and are not required to be included in its capital budget. However, it is admittedly a real cost to the homeowner. The February presentation estimated that hookup costs will range from $3,000 to $10,000. Given the decision to have the Town assume the cost of grinder pumps the estimated range of expenses to property owners is fair, though it is inevitable that there will be unique circumstances for some homeowners that will result in higher costs.

As to the manner of portrayal of total costs, public presentations should cover both the Town and the property owner perspectives as was generally done in the February presentation to the Board of Selectmen. Future presentations should include a more comprehensive description of the types of items and an estimated range of costs which might need to be paid by property owners.

5. Hookup costs are the responsibility of the homeowner. While low interest loans can be obtained from the Community Septic System Loan Program, only a limited number of residents are eligible.

a. Should the Town establish a betterment program to provide affected homeowners with 20-year financing (or similar) to cover their out-of-pocket costs for connecting to the system?
b. Based on the anticipated number of hook-ups, what would financial costs of such a betterment program be to the Town, if any?

Discussion:

The decision to create a betterment program for property owners in order to amortize the cost of connecting to town sewer lines is an interesting idea, but not simply a financial question. I am assuming that any program would be at the option of a property owner as some may choose to

cash finance such costs so as to not incur debt or have a lien placed on the property. It would first be of importance for Town counsel to review the state betterment statute to determine if betterments can be targeted to a sub-group of property owners who choose to participate in some form of voluntary betterment process. Usually betterments are broadly imposed on all property owners receiving the benefits of a local capital expenditure, traditionally (and by statute) for road improvements or the installation of sewer lines. It is unclear whether a city or town has the statutory authority to create a hybrid betterment plan for a sub-group of property owners, not for the direct capital cost of the sewer project but for the property connection to the street. The Board may wish to review a home rule petition filed by the Town of Falmouth to amend the Betterment law to more specifically meet the needs of that community.[4] Placing aside legal issues involving betterments and as a practical matter, what the Board seems to be suggesting is some form of town managed loan program similar to the program offered by Barnstable County.

For the purpose of discussion I am assuming that the Town is considering what might be considered a "vanilla" type of loan program, either as a betterment or as a direct loan. If the loan program is established under the state Betterment Act the program will amortize principal and interest over 20 years at an interest rate at least 2% over the underlying cost of the debt. Thus, if the program is financed by the SRF 2% loan program (similar to the County loan program) the betterment interest would be at least 4%. If the town finances the debt the betterment rate would be at least 2% over the underlying interest on the debt instrument. Under either type of program, the Town would incur some cost in terms of operating the program for such functions as customer service, processing loans or betterments, filing liens documents, etc. Some account also needs to be made in terms of non-payment of property owner obligations as debt service schedules need to be met. Frankly, it is speculative to develop an independent estimate of the cost of such a program at this point as there is no reasonable basis for determining the number of property owners who would voluntarily submit themselves to a betterment or desire a loan from the Town. Staff has not yet developed any cost estimates of a betterment program. I would suggest that the Town consider surveying property owners in order to determine such interest and come back to this issue after it determines public interest in such a program. However, as a benchmark estimate , if roughly two-thirds of those being sewered wished to finance such costs, and assuming that the average cost of hookups was $7,500 per connection, then the town would need approximately $1.9 million to fund the loans. Servicing the loans, I believe, would take the equivalent of .5 FTE staff time for a number of years, tapering off as the sewering effort matures. Some unknown legal costs would be incurred on the front end in terms of developing and executing loan documents and filings. Finally, while anything is possible, it is questionable that the Commonwealth would use SRF money to fund such a program in a second jurisdiction on Cape Cod.

6. The bid for the first section of the sewers as came in at $12 million although the consultants, Stearns and Wheler/GHD, projected costs at $20 million.

a. What caused the great difference in estimated cost and final accepted bid?
b. Does the $12 million bid remain valid now that the BOS voted in 2010 to adjust the timing, location and schedule of construction?
c. If not, how much have costs increased over the accepted $12 million bid?

[4] The most significant aspect of the Falmouth proposal is to lengthen to fifty years the amount of time available to property owners to pay the betterment assessment. It does not, however, create any sort of sub-categories of betterments.

Discussion:

It is impossible to know the precise reasons why a contractor bids a certain amount and all contractors are not similarly situated. That said, the following factors undoubtedly played a role in the bid process. First, the engineering estimate was a conservative estimate tempered by the economy as it existed during the period of time the estimates were made. It is a fair assumption that the depressed economy has produced and will continue to produce low bids for certain (though not all) types of construction work. By way of comparison the first sewer construction project in the Town of Barnstable also came in substantially below the original engineer estimate.

Second, and stressing that what follows is conjecture, it is possible the construction company knowingly made a low bid in the expectation that it would aggressively pursue change orders to make up all or some of the difference. Managing the contract with caution is always important, but particularly so in difficult economic times. Construction companies also sometime bid low on a project when they believe that they may be able to make up the initial reduction in subsequent projects.

As acknowledged in the second and third parts of the question, there already has been authorized change orders due to a change in the construction schedule and it will be up to the management of the Town and the contractor to negotiate the allowable increase in the contract. See the next question for more specific information on total change orders processed to date and contingency amounts.

7. Some $28 million in contingencies has been allocated over the 20-year period.

a. Is that amount sufficient?
b. How much has been paid out from the contingency fund to date?

Discussion:

The Stearns & Wheler engineering estimate for collection system construction contingencies for both Phase 1 and Phase 2 was $42 million; for Phase 1 alone it was $28 million. Additional contingency amounts were established for construction of the wastewater treatment facility (Phase 1: $5.7 million and Phase 2 an additional $1.3 million). Such estimates are acceptable for a project of this kind, though should be reviewed from time to time. While appropriate contingency funding is important and there are rough standards governing the percentage of construction costs which should be "reserved", actual amounts can be set based upon the particular project and its needs. As noted in the following response, the Town has amended the reserve for the treatment plant from the Stearns & Wheler recommendation to a lower amount, $3.1 million.

In response to my questions on change orders and contingency amounts, staff made the following comments:

> *"Contract #3, Route 28 Collection System, was the contract discussed as being subject to a delay claim in excess of $1M for the spring 2010 construction season. The delay claim has been settled for an amount of $117,400. There have been 9 Change Orders (CO) approved (as of April 1, 2011) for Contract #1 (treatment facility upgrade) totaling $567,758, this is well within the contingency of $3.1M. Contracts 2, 3 and 4 have a combined contingency of $470,269 allocated under the SRF loan. As of April 1,*

2011 CO's amounting to $897,908.31 have been approved for these contracts "exceeding" the available contingency. However, 1) these CO's are within the total SRF loan amount of $12,243,500; 2) the Town has discussed with MADEP increasing the loan amount upon completion of the project; and 3) these amounts are within the town appropriation."

While the creation and judicious use of contingency funding for construction projects is important, of equal importance is the ability of Board of Selectmen and the Town Administration to monitor and report progress, changes and events on a timely basis, as issue further discussed at the end of this report.

8. In Town's fiscal update of Feb. 23, 2010 (p. 16) a cost of $300 million for 5000 sewer connections is shown.

a. How was this figure calculated?
b. Does it remain accurate?

Discussion:

The $300 million estimate comes from a memorandum from the Town Accountant, dated January 20, 2010 which, in turn, is based upon data contained in the CWMP. See Tables 9-3, 9-7, 9-8, adjusted for one year of inflation by Stearns & Wheler. The Town has 6,553 developed and 643 developable properties, for a total of 7,196. It is not clear where the 5000 sewer connections estimate comes from as it is not referenced in the CWMP nor in the supporting documentation for the February presentation. Possibly, it was an early estimate of the number of properties to be sewered. The supporting material seems to indicate that the number of parcels to be connected in Phase 1 is about 4,450. As noted previously, revenue will come from the total number of connected properties and, more specifically, the total number of metered accounts. See additional information in response to question number 10.

9. According to calculations in CWMP, costs are based on the assumption that there will be a 36% growth in wastewater generation.

a. Is it valid to use current septic flow or water usage estimates to calculate future wastewater flow and income?
b. How is income allocated with respect to the range of anticipated peak usage (summer) versus the lower usage rate in winter?
c. Will off-season flow rates be sufficient to cover off-season costs?
d. Have income costs been calculated in expectation that the WWTF will be shared with Harwich and/or other nearby Towns?

Discussion:

The growth in wastewater generation will largely be driven by the actual growth in connections to the system. It is difficult to predict future growth, though the estimates contained in the CWMP appear reasonable if the Town adheres to the plan for both Phase 1 and Phase 2. Two additional factors should be considered, however. First, population data from census estimates for Chatham indicate a several-year downward trend. Whether this is a short lived phenomena on not is

unclear, but a decrease in population will certainly decrease wastewater generation as well as per account revenue. Second, as prices rise for both water and wastewater efforts will be made to conserve water usage. Remember, water usage drives property owner wastewater costs and utility revenue.

In terms of question (a), yes it is valid to use water usage data to calculate both costs and revenue and the use of such data emphasizes the need for accurate metering and timely meter reading and data gathering. It is also possible and fair to adjust wastewater billing practices to account for specific differences in water usage and wastewater flows.

Questions (b) and (c) will only be fully answerable after the Town decides upon its policy on wastewater rates and issues its rate schedule. As a general statement, the annual operating budget, including debt service requirements, will need to be matched by the total expected amount of annual revenue from all sources. In addition to the possibility of developing a rate structure that deals with the nature of its seasonal customers, if it is anticipated that there might be a structural seasonal revenue shortfall, the Town could create an operating reserve to meet the systems cash needs as a part of its overall rate setting practice.

Question (d) was asked of the Town Manager who asserted that the calculations were for the Town of Chatham alone.

10. Annual Operation and Maintenance (O&M) costs have been projected at $1,900,000 per year since before 2007. O&M cost is supposed to be offset by revenue generated from connected homeowners, calculated at $400 annually per home. Yet even if 3,000 homes are connected in 10 years, that would produce only $1,200,000 per year.

a. How is the difference of $700,000 expected to be made up?
b. Is this projected $400-per-home charge still valid?

Discussion:

Table 11-1 of the CWMP does show a projected O&M cost of $1.9 million for Phase 1, growing to $2.6 million after completion of Phase 2. It is logical to assume that the full O&M expense will not be realized for several years as the plant is built and becomes operational and as more and more properties tie-in to the system. Stearns & Wheler's estimates are a good starting point, but actual O & M expenses are difficult to project years in advance of their occurrence.

As previously noted, I could find no basis for the assertion that 3,000 homes are to be connected in ten years and the Board of Selectmen should discount any calculations made in using that number.

In response to my questions on O & M cost projections, Chatham staff made the following comments:

"As indicated in your follow-up email of April 15 the derivation of the Boards use of 3,000 homes to arrive at a revenue amount of $1.2M is unclear. Table 11-1 of the CWMP estimates collection system O&M at $900,000 annually and WWTF O&M at $1M annually at the completion of Phase 1. O&M costs will obviously ramp up over the 20 year Phase 1 implementation as flow increase. These O&M estimates do not take into account any savings to be realized by the implementation of photovoltaic or wind energy

projects at the facility that are under review. The $400 yearly user charge is an estimate based on the current users on the sewer system. Using the potentially sewered parcel count of 4,450 the Phase 1 area would generate $1.78M in sewer revenue, in addition to the revenue from current users. As previously discussed this revenue projection is based on the current rate, no escalator has been applied to the O&M costs nor to the sewer rate."

And, further:

"O&M costs were only escalated by the anticipated increase in plant flows, not by a yearly cost escalator due to the difficulty in determining an appropriate escalator. Thus, the yearly average sewer fee of $400 was not escalated for the same reason; therefore, there was no reason to develop pro-formas."

The key question is, I believe, how reliable is the $400 estimate of annual household costs?

First, the Stearns & Wheler numbers are just estimates which need to be proven as the wastewater utility continues to develop.

Second, as previously noted, no inflation estimates have been used in the presentations made to the Board of Selectmen, including projections of Operating & Maintenance expenses.

Third, the use of current O & M expense data and current user charges of the existing system is an unreliable avatar of future O & M expenses or future charges of what will be a significantly changed wastewater system of collection and treatment.

There are issues in terms of homeowner user charges that the Board of Selectmen should consider, in consultation with Town staff. Staff or its consultants should develop thoughtful, long term pro-formas which more accurately project operating revenue and expenses for the system being constructed. The estimates for the system being built, and the practical and policy questions which need to be formulated and answered associated with making those estimates, will be inherently more accurate than using estimates from the existing system, thus permitting the Town to better project future household charges. In addition, and as touched upon previously in the response to BOS question 2, it is more difficult to project user charges in a system that is being built than in a mature wastewater utility system. In a system that is being constructed, the realization of expenses does not perfectly match the timing of system income. The accumulation of a base of ratepayers and rate revenue only happens when a property owner connects to the system and then receives and pays his or her wastewater charges. The incurrence of expenses, however, is only partially driven by the size and growth of the customer base. As alluded to in question 1, the "step up" in revenue and the "plateauing" of expenses are related to each other but not in a perfect 1:1 ratio. The practical and policy issues mentioned previously, and which are embedded in the pro-formas, will help resolve the problems caused by the imbalance of revenues and expenses. For example and obviously, revenue will not be produced from a homeowner not connected to a sewer. The Town's "Question and Answer" document suggests that the Board of Health will require (though does not yet require) homeowners to connect to the system within one year. Even if that one year standard is adopted as an enforced obligation, expenses of the system will still be borne by those that are presently part of the utility system until the hookup occurs. Another policy decision involves the creation and use of appropriate reserve funds. Such reserves can be an effective way to smooth out the imbalances between incurred expenses and realized revenue, though revenue will need to be raised to create such reserves.

Until detailed pro-formas are completed, vetted and accepted, the Board should be cautious in using the $400 estimate of annual charges to property owners.

11. Monitoring construction progress and costs are essential, yet there is no systematic reporting method by which the public and BOS (who also serve as the Water and Sewer Commission) can review costs and progress on a quarterly or semi-annual basis, as is done with OPM approach for Town building projects. Dr. Bob Duncanson estimates the provision of such OPM-style reports would "add several $100,000 dollars (sic) to the project cost."

a. What would be the financial impact, if any, for Stearns and Wheler/GHD to produce an OPM-style quarterly report to the BOS/Water & Sewer Commissioners?

Discussion:

This is the largest and most complex capital program ever attempted by the Town of Chatham and probably will maintain that distinction for a very long time. Undoubtedly the cost of an independent project manager will be significant given the long duration of the program. Perhaps a reasonable approach, if the Board wishes to retain such services, is to have the services extend up to the completion of the WWTF. After that date most of the construction activity will be related to the installation of sewer lines and pump stations which, while significant in cost, is less complex in terms of construction-related issues.

Under all circumstances, however, the Board should insure that it has access to timely, accurate and comprehensive information with respect to construction schedules and costs. It is reasonable to expect that the Board, working in close cooperation with the Town Manager, would be able to reach agreement with respect to the data elements of periodic and meaningful construction and financial reports.

Concluding Comment:

The Board's search for precise answers to what seems like precise questions is understandable, and much of the material presented by Town staff to the Board is helpful and a reasonable perspective of costs and revenue associated with the planned wastewater system. However, the nature of the CWMP as well as financial judgments made from that report are best estimates and not a foretelling of the future. Much can change over the duration of this lengthy and expensive program and those changes will produce results which will differ – perhaps significantly – from the original estimates. I would suggest to the Board of Selectmen that the best perspective on the cost of the program is not a constant search for "right" or "wrong" but rather a concerted effort to continually update estimates as decisions are made which impact costs and as current unknowns become known. Changing circumstances leading to evolving cost estimates is the only thing that can be predicted with certainty. Accurate, timely and transparent reporting and communication amongst the various contractors, town employees and the Board of Selectmen is the best way to insure that changes in cost or project direction are indentified early, given due consideration and made known to the general public.

Attached and for your information is Appendix A which contains a list of the questions posed to the Town as part of my review.

APPENDIX A

Financial Review of Comprehensive Wastewater Management Plan – Chatham

1. Verify if total projected cost of $210 million for Phase I of CWMP is still accurate. Does cost include and or reflect:

a. SRF 2% State Revolving Fund (SRF) loan?
b. Grants from Federal Stimulus Program?
c. USDA Rural Utilities Program grants and low-interest loan package?
d. Is interest included in the projected cost? At what rate? Is that valid?
e. Was there a sufficient inflationary factor built into the projections?

- What assurance does the Town have that either 0% or 2% SRF funding will be available over the duration of the program? What binding commitment has been received from the Commonwealth for either or both 0% or 2% funding for the wastewater capital program?

- Please provide documentation which commits the federal government to providing any federal stimulus funding for the Town's wastewater capital program; same request for USDA grant funding?

- Discussion of interest cost assumptions and the assertion of $80 million in interest expenses. If SRF loans are not available for all capital cost and if the Town is thus required to issue tax-exempt debt, what would be an appropriate blended interest rate assumption? What implications would there be in terms of other capital needs? Does Town have the debt capacity for a substantial amount of the capital cost of the program? What implications would there be in terms of Proposition 2 ½ limits? Credit rating implications.

- Discussion of inflation assumptions. See Engineering News Record for inflation index. What inflation assumptions has the Town made with respect to its program capital cost estimates?

- How "optional" is Phase 2, given plant sizing and Clean Water Act requirements? Need to discuss assumptions behind lowering estimates from $266 million to $210 million: are initial bid results and grant receipts extrapolated into the future? If so, what commitments are in hand.

- Discussion with respect to TOC removal obligations and resultant capital costs. Emerging contaminant treatment costs are speculative, but has any estimate been prepared by Town? [See also Town documents on Indian Hill Well]

- What debt-related reserves, if any, will the Town create or be obligated to create with respect to any non-SRF debt?

2. Verify if the basic assumptions for financing the plan are valid and sufficient to fund the project. The sources of income are identified as:

a. Property taxes

- In part, see above. There is an assumption that cost of system will be divided by "5,000 parcels" and paid over 50 years? By what method will 2% SRF loan payments be extended to 50 years? Where does the 5,000 parcel number come from? How many taxable properties are there in Chatham [Assessing data indicates 6,151 residential units; unsure of commercial number].

b. Increased sewer revenues

- Discussion of collection of sewer revenues, parcels versus billable accounts. [Water department lists 6,937 connections…how many billable accounts?]

c. Debt drop off plus over/under offset

- Discussion with respect to future capital needs of Town and underlying assumptions.

3. Is it possible to sustain the debt drop-off practice of helping to fund the CWMP over the 20-year period of Phase I?

- Discussion item covered in preceding section.

4. Are the financial cost projections for individual homeowner accurate?

a. Of the various options shown on the tables that calculate individual homeowner' costs, which are most accurate at this time?

- Item for discussion. See also question 2 .

b. Has an inflationary factor been built in to all the various options? What rate is used?

- Please provide source documentation showing inflation assumptions for future system costs.

c. Should hook-up costs and increased sewer service fee be included in the "true" cost to the homeowner?

- In part, related to previous questions and data. Item for discussion.
- Hook up costs: are following costs (or generic average) included? Line to street estimates related to assumed length to street; line pump cost and installation cost; utility relocation expense; destruction and/or removal of existing Title V tank; landscaping; sewer connection fee; Title V removal inspection fee. Discussion on categorization of "true" costs.

4. Are the financial cost projections for individual homeowner accurate?

a. Of the various options shown on the tables that calculate individual homeowner' costs, which are most accurate at this time?

- Item for discussion. See also question 2 .

b. Has an inflationary factor been built in to all the various options? What rate is used?

- Please provide source documentation showing inflation assumptions for future system costs.

c. Should hook-up costs and increased sewer service fee be included in the "true" cost to the homeowner?

- In part, related to previous questions and data. Item for discussion.

- Hook up costs: are following costs (or generic average) included? Line to street estimates related to assumed length to street; line pump cost and installation cost; utility relocation expense; destruction and/or removal of existing Title V tank; landscaping; sewer connection fee; Title V removal inspection fee. Discussion on categorization of "true" costs.

5. Hookup costs are the responsibility of the homeowner. While low interest loans can be obtained from the Community Septic System Loan Program, only a limited number of residents are eligible.

a. Should the Town establish a betterment program to provide affected homeowners with 20-year financing (or similar) to cover their out-of-pocket costs for connecting to the system?

- Issue for discussion. Is Town truly considering such a program? If so, discussion of betterments versus other funding methods…need to review if betterments can be used for hook-up costs.

b. Based on the anticipated number of hook-ups, what would financial costs of such a betterment program be to the Town, if any?

- Issue for discussion. See previous question…if Town moves forward need to develop a more precise "average" cost.

5. Hookup costs are the responsibility of the homeowner. While low interest loans can be obtained from the Community Septic System Loan Program, only a limited number of residents are eligible.

a. Should the Town establish a betterment program to provide affected homeowners with 20-year financing (or similar) to cover their out-of-pocket costs for connecting to the system?

- Issue for discussion. Is Town truly considering such a program? If so, discussion of betterments versus other funding methods…need to review if betterments can be used for hook-up costs.

b. Based on the anticipated number of hook-ups, what would financial costs of such a betterment program be to the Town, if any?

- Issue for discussion. See previous question…if Town moves forward need to develop a more precise "average" cost.

6. The bid for the first section of the sewers as came in at $12 million although the consultants, Stearns and Wheler/GHD, projected costs at $20 million.

a. What caused the great difference in estimated cost and final accepted bid?

- Need to review documents relating to original engineering estimate of sewer construction costs, bid proposal from winning contractor and contract terms, any requested and pending change order(s) and any approved change order(s).

b. Does the $12 million bid remain valid now that the BOS voted in 2010 to adjust the timing, location and schedule of construction?

- Issue of law. Need to discuss.

c. If not, how much have costs increased over the accepted $12 million bid?

- Issue for discussion.

7. Some $28 million in contingencies has been allocated over the 20-year period.

a. Is that amount sufficient?

- What assumptions were used to develop contingency estimates? Does the contingency estimate presume Town will move forward with Phase II work?

b. How much has been paid out from the contingency fund to date?

- Please provide source documents which indicate use of contingency funds, assuming its use has been authorized.

8. In Town's fiscal update of Feb. 23, 2010 (p. 16) a cost of $300 million for 500 sewer connections is shown.

a. How was this figure calculated?

- Please provide documentation showing the source of the estimated cost.

b. Does it remain accurate?

- Item to be discussed. Does any document exist, created after that date and within a Town department, indicating an increase or decrease in the estimate?

9. According to calculations in CWMP, costs are based on the assumption that there will be

a 36% growth in wastewater generation.

a. Is it valid to use current septic flow or water usage estimates to calculate future wastewater flow and income?

- Discussion point. What protocol will be used to make adjustments in this estimate? Population assumptions and census data to be discussed.

b. How is income allocated with respect to the range of anticipated peak usage (summer) versus the lower usage rate in winter?

- Discussion point. What is current practice?

c. Will off-season flow rates be sufficient to cover off-season costs?

- Discussion point. What is current practice?

d. Have income costs been calculated in expectation that the WWTF will be shared with Harwich and/or other nearby Towns?

- Please provide any documentation related to this question.

10. Annual Operation and Maintenance (O&M) costs have been projected at $1,900,000 per year since before 2007. O&M cost is supposed to be offset by revenue generated from connected homeowners, calculated at $400 annually per home. Yet even if 3,000 homes are connected in 10 years, that would produce only $1,200,000 per year.

a. How is the difference of $700,000 expected to be made up?

- What is the underlying policy of the Town in terms of source of funding for wastewater operating costs? Does the Town presume that property taxes will be used to pay for any operating costs? Is there an assumption that sewer fees will be used, in part, for debt service?

- Please provide documentation showing assumptions associated with $1.9 million estimate. [Note: presentation on February 23rd shows that O & M will grow to $1.6 million in 2032…need to discuss differing numbers]. Projected O & M and projected sewer revenue show surpluses beginning in FY12. The revenue surplus will be earmarked for what activity? Timing issues of properties hooking-up and revenue collections should be discussed…how will timing impact revenue requirements? Policy on hook-ups? May Board of Health defer hookups?

- Has the Town worked up pro-formas for the expected operating budget of the wastewater entity?

- What inflation estimates are assumed?

- What future 3R (repair, replacement and renewal) costs or reserves, if any, are included in operating cost assumptions?

- With respect to Clean Water Act requirements, has the Town developed estimates for future stormwater program capital or operating costs?

  b. Is this projected $400-per-home charge still valid?

- Discussion point. Please provide source documentation showing assumptions behind this estimate. Not clear from presentation how this estimate was calculated.

11. Monitoring construction progress and costs are essential, yet there is no systematic reporting method by which the public and BOS (who also serve as the Water and Sewer Commission) can review costs and progress on a quarterly or semi-annual basis, as is done with OPM approach for Town building projects. Dr. Bob Duncanson estimates the provision of such OPM-style reports would "add several $100,000 dollars (sic) to the project cost."

a. What would be the financial impact, if any, for Stearns and Wheler/GHD to produce an OPM-style quarterly report to the BOS/Water & Sewer Commissioners?

- Issue for discussion. Is there any document which indicates the posing of the question and any response from Town consultants/engineering firms on this question? What plans does the Town Manager have to develop in-house reporting with respect to the program?

In addition, the following follow-up questions were e-mailed to the Town Manager of January 23rd, 2011, with the last question posed in an e-mail on January 25th, 2011.

1. You may recall that there was a discrepancy between certain cost projections in the Stearns & Wheler CWMP and numbers contained in the February presentation. S & W noted that it expected $40 million for contingency items, $16 million for design and $24 million for fiscal, legal and engineering costs. See Table 9-1. That amount takes the estimated construction cost from $160 million (later increased by $10 million) and increases it to $240 million (later, $250 million). I am having trouble reconciling those numbers with the February report. At our meeting you stated you would provide additional information to clarify this item.

2. On page 8 of the February presentation there may have been a mathematical error as there is a discrepancy of $2.5 million. You stated you would review the math. Have you had a chance to do so?

3. To insure I understand, the February report asserts the following (I believe). The cost of Phase 1 is $210 million plus interest. Interest is assumed to range between $62 million and $80 million. To be conservative, it was suggested in the report that for planning purposes $80 million should be used. Thus, the total cost would be $290 million. However, the February report goes on to assert that a reader should deduct from that amount the actual bid from the first sewer construction project (a savings of $8 million) as well as the USDA grant ($18.5 million). Is this a correct interpretation of the February report?

4. On page 12 of the February presentation the slide seems to indicate that the original estimate of $150 million for collection system costs should now be viewed as actually $90 million. Frankly, if we discussed this at our meeting I failed to take any notes. Please explain how this calculation was made.

5. On page 16 of the February report, we did discuss the calculation of $300 million total cost divided by 5,000 parcels, or a per parcel capital cost of $60,000…paid for over 50 years. Given our discussion are you still comfortable with these numbers?

6. We did not discuss the question from the BOS with respect to the Town creating a betterment program for property owner hook up expenses. What would you estimate the cost of administration of such a program to be? How would it be structured?

7. We did talk about the fact that the time for the first construction contract has been extended by the Town, resulting in a change order. What is the cost of the change order? Are there any other pending change orders and, if so, what are the estimated costs of those change orders? [My notes indicate that you only have one change order in hand].

8. There was an open issue from the meeting with respect to the difference between $1.9 million for O&M and $1.2 million. You stated you would provide additional information to clarify this item.

9. The February presentation as well as the CWMP state that current annual customer sewer fees total $400. I know that we discussed this amount at our meeting and I believe you stated that you feel comfortable with that figure going forward. I believe I asked if you or staff had developed pro-formas reflecting probable future O&M costs. My notes do not indicate your response. To the extent that you remain comfortable with that amount, do you have any pro-formas which show numbers averaging about $400 per year for customers?

10. Do you have any additional thoughts on the question of placing the BOS in what they would consider to be a better position to monitor the construction program?

11. What is the current status of the originally approved $55.6 million SRF loan? While the loan was in the 2009 IUP, it is not in the 2010 IUP.

Finally, on April 22, 2011 and by telephone discussion with Dr. Duncanson, a couple of follow-up questions dealing with contingency reserve amounts associated with the new WWTF and with the number of parcels scheduled for sewering were answered.