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DOCUMENT 26

CITY OF HAVERHILL

In Municipal Council February 14 2012

ORDERED:

That the following November 1, 2011 recommendations of the Water Supply Committee be and are hereby adopted for implementation by the Water Department, subject to appropriation where necessary by the Mayor and City Council:

1. The City should formally track the water supply surplus and deficit on an annual basis and incorporate this information into its annual statistical report. This data will be invaluable and a necessary tool for planning for a new source.

2. The City must continue with and expand its water conservation and leak detection efforts to include:

   a. The replacement of plumbing fixtures as needed in municipal buildings in compliance with the requirement of the WMA permit.
   b. Public education programs to inform the public about water conservation methods. The programs should include an educational program geared to elementary school-aged children.
   c. Consider the feasibility of offering commercial and residential water audits.
   d. In anticipation of changes to the City's WMA permits requiring conservation-based rate structures, evaluate the advantages and disadvantages of a conservation-based rate structure.
   e. Change the WMA requirement of leak detection to a three-year cycle from the current two-year cycle.

3. The City should continue its efforts to reduce unaccounted-for water and reduce residential per capita use. As part of these efforts:

   a. Continue to develop improved methods for tracking unmetered water used for municipal purposes such as firefighting, street sweeping, water main breaks, hydrant flushing, and other municipal uses.

   b. Continue refining methods of calculating residential per capita day estimates.

Haverhill

Robert E. Ward P.E., Deputy DPW Director
Water/Wastewater Division
Phone: 978-374-2382 Fax: 978-521-4083
rward@haverhillwater.com

February 10, 2012

To: The Honorable James J. Fiorentini
Mayor of Haverhill

From: Robert E. Ward
Deputy DPW Director

Subj: City Council Order Adopting Recommendations of the Water Supply Committee

I respectfully submit to you a City Council Order adopting the recommendations of the Water Supply Committee as listed in their report dated November 1, 2011.

The Water Supply Committee presented their report and recommendations to the City Council at their meeting on December 20, 2011. Their recommendations included a number of activities for implementation by the Water Department related to ensuring an adequate drinking water supply for Haverhill's future. Please note that the Order states implementation is subject to the appropriation of funds.

Attached for your information is a copy of the Water Supply Committee's report.

If the attached document is acceptable, please forward it to the City Clerk to be placed on the City Council meeting agenda.

If you need additional information, please call me at (978) 374-2382.

Cc: John A. Michitson, City Council President, and
Members of the City Council
Michael Stankovich, Director of Public Works
William Cox, City Solicitor
John D'Aoust, WTP Facility Manager
Water Supply Committee Members

November 1, 2011

The Honorable James J. Fiorentini
Mayor of Haverhill
City of Haverhill
4 Summer Street
Haverhill MA 01830

Report of the Water Supply Committee

Dear Mr. Mayor:

Please find attached the report of the Water Supply Committee containing recommendations offered in response to your request to study future water supply alternatives for the City of Haverhill. Please contact us if you have any questions about the content of the report.

Respectfully submitted,

William Pauk - Resident and Chairman of Committee

Brendan O'Regan - Resident and Secretary of Committee

Brent Baeslack - Resident and member of City's Conservation Commission

Krystine Hetel - Resident and former City Councilor

Sam Meas - Former Congressional Candidate, Resident and Consultant for State Street Corp.

Mark Reinhold - Associate Professor, Northern Essex Community College

Advisors to the Committee
John D'Aoust - Resident and Plant Manager, Haverhill Water Department
Robert Ward - Resident and Deputy Director, Haverhill Department of Public Works
Robert Williamson - Senior Project Manager, Wright-Pierce Engineering

REPORT OF THE WATER SUPPLY COMMITTEE

Introduction

The City of Haverhill is the second largest city in Essex County, Massachusetts and is a major center of population growth in the county. Between the years 1980-2010, the City's population grew by nearly 30 percent from 46,865 to 60,879 persons. To ensure that the City is able to provide adequate water for population growth and economic development, the Mayor of Haverhill, the Honorable James J. Fiorentini, requested that several residents, assisted by administrative staff of the Haverhill Water Department, as well as the City's engineering consultant, volunteer to serve on a committee with the objectives of: (1) determining the adequacy of the City's current water supply; (2) identifying the water use needs of the City 20 to 25 years henceforth; and (3) identifying what additional water sources may be tapped to keep up with residential, industrial, and commercial growth. Specific details of the Mayor's directives are outlined in the attached memo of Dec. 29, 2010.

The appointed committee met on a biweekly basis from December 2010 though June 2011 to address the tasks put forth by the Mayor. During the early meetings, the committee spent time learning where the City's current water supply originates and how the Haverhill Water Department prepares the water for distribution to the City. We also reviewed existing management practices such as water conservation, the need for adequate redundancy, potential future supply sources, and the advantages and disadvantages of utilizing water from various possible sources. Finally, we spent several meetings deliberating various aspects of alternative water supplies and the complexities of bringing new sources online such as cost, regulatory issues, time frames, competing interests, increasing environmental concerns, and withdrawal methods. In the end, the committee has developed a series of recommendations in response to your directive regarding how the City can ensure an adequate supply of water in the future.

Per your charge, we respectfully offer the following.

Findings

Our review and findings were based on the materials presented to us by the Water Department which included studies, reports, and other documents going back as far as the early 1970's. We also requested additional information from the Water Department to fill data gaps. This section of the report summarizes specific findings, which address your charge to us.

Early on, we recognized that planning for a community's future water supply and implementing that plan is critical to a community's quality of life for its residents and for future economic growth. The planning process should also look well beyond a period of 20 to 25 years and that a vision of 50-years or more would be in the best interest of the City.

Current Supply Capacity

Based on the most recent Massachusetts Department of Environmental Protection (MassDEP) Water Management Act (WMA) permit under which the City is currently operating, Haverhill's

current water supply has a firm yield capacity of 7.1 million gallons per day (mgd). The firm yield is defined as the average sustained volume that can be withdrawn from a water supply under worst-case drought conditions and is the maximum authorized annual average withdrawal volume as per the City's WMA permit. This amount should be greater than the average daily demand on the system.

On this basis, over the last five years, the City's reserve capacity (difference between the firm yield and average day demands) has averaged 1.13 mgd (15.9%) and ranged from a low of 0.76 mgd (10.7%) in 2006 to a high of 1.42 mgd (20.0%) in 2009.

MassDEP has already advised the City that its permitted withdrawals will be revised as necessary when the Merrimack River Basin's WMA permit expires in 2014.

We also found that there is a paramount need to address the current lack of redundancy to protect the water supply from certain inherent vulnerabilities associated with a surface water supply.

Projected Water Needs

The City's 2010 Water Master Plan developed water supply need projections up to the year 2030 using two common estimating methods: (1) by assuming that future water service connections will mirror historical water service connections; and (2) by projecting population growth/decline (and corresponding water use) based on planning estimates.

Methods #1 and #2 resulted in future water needs projections ranging from 6.8 mgd and 7.1 mgd. The committee's research revealed neither a better methodology nor data that would give good reason to alter these projections.

We feel that the water supply need projection estimates made in the 2010 Water Master Plan are reasonable and conservative (on the low side) but as conditions change, the estimates should be revisited.

Water Conservation

The City's WMA permit requires aggressive water conservation measures as a condition of the permit. Many of these measures have been in place for years. Nonetheless, the committee conducted a review of current water conservation measures and practices to determine if appreciable gains/savings can be made to prolong the current supply yield. Following is a brief summary.

- Currently, the City conducts a leak detection study every two years. This program was initiated in 2002 as part of the requirements of the WMA permit. Since its inception, the leak detection efforts have resulted in a dramatic drop in lost water due to leakage, but more recently have resulted in a diminishing return as the system is tightened. It is unlikely that any further gains in leakage detection will be identified which could provide a measurable benefit to the yield.

- In 2010, the City embarked on a system-wide meter and technology upgrade project, which will replace existing inaccurate meters. This program will result in better water consumption data and reductions in unaccounted-for water.
- Over the years, the City has conducted a public education program touting water conservation.
- The plumbing fixtures of new, repaired, and renovated City buildings are being outfitted with low-flow plumbing fixtures in compliance with the requirements of the WMA permit.
- The City's residential per capita water use of approximately 65 gallons per capita day (gpcd) is currently below the 80 gpcd threshold required of the WMA permit.

Population Projections

The projections made in the City's 2010 Water Master Plan took a conservative (on the low side) look at population growth and utilized data from various federal, state, and local agencies as well as population data tracked by the City. During the committee's work, we engaged the Merrimack Valley Planning Commission (MVPC), from which the 2010 Water Master Plan obtained data, to discuss their perspectives of Haverhill's future population as it relates to the 2010 census. The 2010 census found Haverhill's population to be 60,879 persons, while the City's data predicted a 2009 population of 62,741.

The 2010 Water Master Plan projections resulted in an estimated population of approximately 65,000 persons in 2030 (6.8% growth over 20 years) while the MVPC projects a population of approximately 68,575 in 2030 (12.6% growth over 20 years).

A 2003 study conducted by the Executive Office of Environmental Affairs (EOEA) and the MVPC concluded that Haverhill's build-out population is projected to approach 78,000 persons. This estimate was made using zoning and other planning criteria in existence at that time. However, the report did not estimate what year build-out would be reached.

On the basis of the above, we concur that the 2010 Water Master Plan appears to validate recent census data, and that projections made in that plan are reasonable and applicable for water planning purposes.

Accommodations/Considerations for Business Growth

The population and water-use projections made in the 2010 Water Master Plan included consideration for the water supply needs of future businesses. These considerations included consultation with the City's Economic Development Director and integration of the City's economic and business development initiatives.

From the information provided to us for our deliberations, we have learned that projecting future business activity can be difficult. If history is any indication, however, Haverhill has been successful in attracting large, water-intensive businesses.

Furthermore, the MVPC views Haverhill as the "economic engine" of the region and is forecasting a favorable business growth climate for the City. Their basis includes Haverhill's proximity to interstate corridors, available labor pool, competitive water rates (as compared to surrounding communities), extensive water infrastructure, and land availability and affordability. As such, the MVPC population projections are more aggressive than the 2010 Water Master Plan projections.

Future Supply

Studies conducted on behalf of the City as far back as the 1960s have indicated that there are very few large-scale alternatives other than the Merrimack River from which the City could reasonably obtain its additional long-term water supply. Since then, development, regulation, and other competing interests have narrowed the options even further to where the Merrimack River is likely the *only* viable source having the quantity and quality needed to sustain the water supply needs of the City both now and well into the future.

Recommendations

The committee has formulated the following recommendations:

1. The City should formally track the water supply surplus and deficit on an annual basis and incorporate this information into its annual statistical report. This data will be invaluable and a necessary tool for planning for a new source.

2. The City must continue with and expand its water conservation and leak detection efforts to include:

    a. The replacement of plumbing fixtures as needed in municipal buildings in compliance with the requirement of the WMA permit.
    b. Public education programs to inform the public about water conservation methods. The programs should include an educational program geared to elementary school-aged children.
    c. Consider the feasibility of offering commercial and residential water audits.
    d. In anticipation of changes to the City's WMA permits requiring conservation-based rate structures, evaluate the advantages and disadvantages of a conservation-based rate structure.
    e. Change the WMA requirement of leak detection to a three-year cycle from the current two-year cycle.

3. The City should continue its efforts to reduce unaccounted-for water and reduce residential per capita use. As part of these efforts:

    a. Continue to develop improved methods for tracking unmetered water used for municipal purposes such as firefighting, street sweeping, water main breaks, hydrant flushing, and other municipal uses.
    b. Continue refining methods of calculating residential per capita day estimates.

4. Continue and increase efforts to require compliance with the City's large water meter testing ordinance, which includes testing of large meters and replacement of inaccurate and improperly sized meters.

5. Continue the program to identify and replace inaccurate residential water meters.

6. Because of the uncertainty of future regulatory requirements, unknown climate impacts, economic fluctuations, competition for water resources, and limited reserve water supply capacity, we recommend that the City continue and expand current efforts to develop the Merrimack River as the City's next water supply. The Merrimack River is the only large capacity source that can meet the City's current and future water needs. Additionally:

    a. Recognizing the public perception that comes with considering the use of the Merrimack River, we do not recommend any supply alternatives that involve a direct withdrawal.
    b. We recommend that the only method of withdrawal from the river to be considered consist of a groundwater supply system, which withdraws water indirectly from the Merrimack River taking advantage of the natural filtering capabilities of sediments.
    c. We recommend that efforts to develop the Merrimack River include a long-term vision that includes provisions for the city's build-out conditions.
    d. We recommend that planning, engineering, and permitting for a withdrawal from the Merrimack River begin in earnest in fiscal year 2012 and continue until a permit to withdraw has been obtained. The planning, engineering, and permitting process is expected to take 3 to 6 years.

From: Mayor James J. Fiorentini [mayor@cityofhaverhill.com]
Sent: Wednesday, December 29, 2010 2:25 PM
To: Robert Ward
Cc: lkoutoulas@cityofhaverhill.com
Subject: draft: goals for committee

Dear committee members:

Thank you for agreeing to serve on the water resources task force.

First, some housekeeping matters. Under the new open meeting and public records laws, all of your meetings are subject to the open meeting and public records laws. This means that all meetings must be publicly posted no later than 48 hours in advance of the meeting, and the public must be allowed to attend. Minutes must be kept of each meeting in the minutes must be appropriately preserved.

I suggested as a first order of business the committee elected a chair, either permanent or temporary, and appoint someone on the committee who will agree to take notes. Linda Koutoulas of my office staff will work with both of these people to make certain that the meeting is properly posted. Once we have the minutes, we will make certain that they are properly filed.

Please take a particular effort to make certain that all of the members are notified every time of every meeting. Once a committee chair is chosen please contact my office and they will make certain that you have up-to-date contact information for everyone appointed to the committee.

Tasks and goals

The task of this committee is to make recommendations concerning the long-term water usage needs of the City of Haverhill. I consider this to be one of our most important long-range planning needs.

I would like to have a written recommendation from the committee if at all possible no later than 90 days from the date of your first meeting. If you find that to be a goal you cannot meet, please have the chair of the committee contact me.

In determining whether the long range water needs for the city, I ask you to bear in mind the following:

1. What is our current capacity to supply water to our residents and businesses and how close are we to the maximum capacity?

2. What is the current and projected water usage of the city over the next 20 to 25 years? In making this projection, you will need to take into account our current and projected needs;

3. To assist you in making this projection, please take a look at the latest census data which we should have some time in February about the city's population. What are the

projections for the city's continued population growth over the next decade or two? Most of the current projections about water usage assume that our city population will continue to grow as it did in the 1980s. Please look at the most recent data when it is available and see if that changes some of the projections which are currently on file.

4. In projecting our future water usage, please look at the business needs of our city. What is our water capacity at the present time and how much capacity will be needed if new business comes to the city?;

5. If additional water supply is necessary, what is the best safest and most adequate means of supply?

6. In that additional supply be adequately met by leak detection or conservation measures?

7. In general, what recommendations do you make to make certain that Haverhill will have adequate water supply over the next several decades?

Over 100 years ago, our forebears in government planned for Haverhill's long-term water needs. They correctly foresaw that Haverhill would have a rapid period of residential and industrial growth. With their foresight, the city bought up land around Kenoza Lake and adequately protected its water supply for a century to come.

The charge of this committee is to be as far-reaching and forward thinking as were our forebears over a century ago. I have appointed each of you because I know you are up to this task.

I thank you, again, for your service.

Very truly yours,

James J. Fiorentini, Mayor

26

4. Continue and increase efforts to require compliance with the City's large water meter testing ordinance, which includes testing of large meters and replacement of inaccurate and improperly sized meters.

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REFER TO PLANNING & DEVELOPMENT

Attest: Mgr G Tum

City Clerk

JAMES J. FIORENTINI
MAYOR

CITY OF HAVERHILL
MASSACHUSETTS

CITY HALL, ROOM 100
FOUR SUMMER STREET
HAVERHILL, MA 01830
PHONE 978-374-2300
FAX 978-373-7544
WWW.CI.HAVERHILL.MA.US

February 14, 2012

City Council President John A. Michitson
And Members of the Haverhill City Council

RE: Water Supply Committee report

Mr. President and Members of the City Council:

Attached is the report from the Water Supply Committee and an order asking you to adopt that report.

The members of the Water Supply Committee will be before the Council to explain their report and to ask that you approve an order adopting their recommendations.

An order is enclosed and I recommend approval.

Very truly yours,

James J Fiorentini, Mayor

JJF/lk

Encl.

33-B

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CITY COUNCIL

JOHN A. MICHITSON
PRESIDENT

ROBERT H. SCATAMACCHIA
VICE PRESIDENT

MICHAEL J. HART
WILLIAM H. RYAN
SVEN A. AMIRIAN
MICHAEL S. MCGONAGLE
WILLIAM J. MACEK
COLIN F. LEPAGE
MARY ELLEN DALY O'BRIEN

CITY OF HAVERHILL

HAVERHILL, MASSACHUSETTS 01830-5843

see amended Minutes

CITY HALL, ROOM 204
4 SUMMER STREET
TELEPHONE: 978-374-2328
FACSIMILE: 978-374-2329
www.ci.haverhill.ma.us
citycncl@cityofhaverhill.com

MINUTES OF THE PLANNING AND DEVELOPMENT COMMITTEE MEETING HELD ON THURSDAY, MARCH 1, 2012

A Planning & Development Committee Meeting was held on Thursday, March 1, 2012 at 7:00 P.M. in the City Council office.

Committee Members: Chairperson Robert Scatamacchia, Councillor William Ryan and Councillor Sven Amirian. Councillor William Macek also attended.

Department Heads: Michael Stankovich-Director, Public Works, Robert Ward-Deputy Director, Public Works.

Attendees: Brent Baeslack, John D'Oust, Roland Plourde, Brendan O'Regan

The following items were on the agenda for discussion:

1. **Doc.# 97-Q/11** – Communication from Councillor Amirian requesting a discussion regarding Santa Parade's 2012 route and the possible impact of construction. *Roland Plourde of the Santa Parade Committee and Councillor Scatamacchia had conversations with Bernie Lovita of Mass Highway. Mr. Lovita stated that the construction would not impact the parade route. Mr. Plourde spoke with the police department and was told that it would be too difficult logistically to change the route. A motion was made to maintain the current parade route. Passed unanimously.*

2. **Doc. #26** – Order to adopt recommendation of Water Supply Committee and adopt for implementation by the Water Department, subject to appropriation where necessary by the Mayor and City Council. *A motion was made to accept the recommendations of the Water Supply Committee. Passed unanimously.*

3. **Doc.# 74-P/11** – Communication from Councillor Amirian requesting a discussion about a possible revenue stream by supply water/wastewater services to Plaistow, NH and other communities. *A motion was made to have the Water Supply Committee continue to study the possible sales of water/wastewater to other communities. Passed unanimously.*

Respectfully submitted,

Robert H. Scatamacchia
bsa

Robert H. Scatamacchia, Chairperson
Planning & Development Committee
Haverhill City Council

March 2, 2012

RHS/bsa
c: Mayor James Fiorentini
City Councillors

IN CITY COUNCIL: March 13 2012
MINUTES ACCEPTED AS AMENDED (see Amended copy)
Attest: [illegible]
City Clerk

Copy
Backup

CITY COUNCIL

JOHN A. MICHITSON
PRESIDENT
ROBERT H. SCATAMACCHIA
VICE PRESIDENT
MICHAEL J. HART
WILLIAM H. RYAN
SVEN A. AMIRIAN
MICHAEL S. MCGONAGLE
WILLIAM J. MACEK
COLIN F. LEPAGE
MARY ELLEN DALY O'BRIEN

Amended Minutes (33-B)

CITY OF HAVERHILL

HAVERHILL, MASSACHUSETTS 01830-5843

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MINUTES OF THE PLANNING AND DEVELOPMENT COMMITTEE MEETING HELD ON THURSDAY, MARCH 1, 2012 (AMENDED)

A Planning & Development Committee Meeting was held on Thursday, March 1, 2012 at 7:00 P.M. in the City Council office.

Committee Members: Chairperson Robert Scatamacchia, Councillor William Ryan and Councillor Sven Amirian, **President John Michitson**, Councillor William Macek, and **Councillor Colin LePage** also attended.
Department Heads: Michael Stankovich-Director, Public Works, Robert Ward-Deputy Director, Public Works.
Attendees: Brent Baeslack, John D'Oust, Roland Plourde, Brendan O'Regan

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Respectfully submitted,

Robert H. Scatamacchia

Robert H. Scatamacchia, Chairperson
Planning & Development Committee
Haverhill City Council

March 2, 2012

RHS/bsa
c: Mayor James Fiorentini