Prepared for

Neponset Emergency Water Supply (NEWS) Project

Summary of Public Water System Capacities and Issues for the Assessment of Water Sharing Options During Water Supply Emergencies

Prepared by

GEOSYNTEC CONSULTANTS
289 Great Road
Acton, MA 01720
Telephone: (978)-263-9588
Fax: (978)-263-9594

Neponset River Watershed Association
2173 Washington Street
Canton, MA 02021
Telephone: (781)-575-0354
Fax: (781)-575-9971

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1. INTRODUCTION AND PROJECT SCOPE

1.1 Introduction

The communities of Dedham-Westwood, Foxborough, Medfield, Norwood, Sharon, and Walpole, within the Upper Neponset River Watershed have worked together to assess opportunities and barriers to sharing drinking water during short-term water supply emergencies. Several of these communities have experienced water bans and emergency water supply declarations in the past. Additionally, water is shared on an informal basis between communities as needs arise. Often water is shared during maintenance, system failures and other situations requiring short-term assistance. As the population grows in each of these communities, the need for inter-municipal aid for short-term water supply assistance becomes more important. Many of the public water supply systems in this part of the Upper Neponset River Watershed do not have the system redundancy and excess capacity to address all of their water supply needs, especially during a short-term emergency. Developing a regional collaboration, where each community and their respective local officials are aware and supportive of the conditions and requirements for sharing water, will help to foster a more comprehensive water supply management approach in the Upper Neponset River Watershed.

Recent updates to population projections and build out analyses conducted by the Executive Office of Environmental Affairs identify future water supply shortages in a number of these communities. The need to have an agreement or system in place that would facilitate immediate assistance between neighboring communities, could be a useful tool for the protection of public health and safety and to ensure that the residents of these communities do not experience unnecessary water supply shortages.

1.2 Project Scope

In order to facilitate emergency water supply sharing, a regional assessment was conducted to identify current water supply sources, existing water supply distribution infrastructure, current inter-municipal water supply connections, regulatory constraints on water sharing and existing water sharing agreements.

A written Memorandum of Understanding (MOU) was developed to specify the general conditions under which water would be shared. Attempts were made to identify regional water sharing arrangements as well as municipal-to-municipal interconnections. Several committee meetings were held to present draft language and obtain comments and inputs. Each committee meeting provided an opportunity to network and exchange information concerning community water supply issues. The open discussions and information exchange helped to create an atmosphere that facilitated the development of the MOU.

The professionals involved in daily water supply issues in these communities understand the importance of mutual aid during water supply emergencies and they have all cooperated in the past as emergency situations occurred. However, such collaboration has been spontaneous and has lacked an overall framework that governs such situations. Water supply superintendents
require support from their boards and municipal leaders to enter into a water sharing event knowing that all parties have agreed to the conditions for water sharing in advance. The MOU is structured to provide full knowledge and agreement by all parties prior to initiation of water sharing for short term emergency support. It is envisioned that each community will take the opportunity to endorse and support the effort by ensuring that each responsible authority signs the MOU and supports the efforts of the Neponset Emergency Water Supply Collaborative.

Many of the communities have existing infrastructure that makes it possible to share and exchange drinking water. Due to the engineering and design of the systems, many terminal points exist where one community’s public distribution system ends and another begins a short distance away. During this project existing physical inter-municipal water supply connections were identified and mapped. In addition, options for designing new connections to shared public water supply and accounting for water shared were developed.

1.3 Report Organization

Section 2 of this report presents an overview of the study area and community profiles on the water supply sources and conditions for each of the seven project area communities. It also provides analyses of water sharing potential viewed from a number of perspectives.

Section 3 presents a discussion of the regulatory context surrounding water sharing amongst communities.

Section 4 presents a description of existing and potential inter-municipal interconnections and conceptual cost estimates for potential interconnection improvements.

The appendices include the proposed MOU itself and a variety of other useful background information.
2. UPPER NEPONSET RIVER COMMUNITY WATER SUPPLY PROFILES

2.1 Study Area Overview

The study area includes the communities of Dedham, Westwood, Foxborough, Medfield, Norwood, Sharon, and Walpole. All of these communities are generally suburban in their land use patterns. They are located at or near the headwaters of the Neponset River and several of the communities straddle basin divides with the Charles and Taunton River Watersheds. Most communities obtain their drinking water from public water supply wells located within their own municipal boundaries, and have water supply systems managed by municipal water departments. The communities of Dedham and Westwood are served by the Dedham-Westwood Water District, a public entity that draws water from the two town area, supplemented with MWRA water for peak demand periods. The Town of Norwood currently obtains all its water from the MWRA.

Figure 1 provides an overview of the study area, water supply sources and source water protection areas. Table 1 summarizes DEP data for the various supply sources.

This section also provides a brief description of each Upper Neponset community obtained from the Executive Office of Environmental Affairs and through discussion with each community. Water supply capacity and issues are summarized for each community. Figure 1 presents a summary map showing the Neponset River Watershed, town boundaries and water supply source locations.
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<th>TOWN</th>
<th>MAX POP</th>
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Table 1 continued. Public Water System Summary for Upper Neponset Communities (DEP)

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2.2 Walpole Town Profile

“Founded in 1724, Walpole has an ideal location just 18 miles southeast of Boston with MBTA Commuter Rail and bus service to Boston. Because of the natural resources of Great Cedar Swamp, bog iron and the Neponset River, industry was attracted to Walpole. Over time, however, the town has evolved into a growing bedroom community with a stable mix of commercial and industrial land uses. The current population numbers almost 23,000 (EOEA, 1999).”

Current Water Supply Sources
School Meadow Brook Aquifer-7 operational sources. Mine Brook Aquifer-3 operational sources with a 4th being renovated and a 5th proposed.

System Permitted Withdrawal Capacity
Walpole is permitted to pump no more than 7.2 MGD (DEP)

Treatment Components
Two treatment plants: Mine Brook has a capacity of 3 MGD and utilizes membrane filtration and School Meadow brook has a capacity of 4 MGD and uses green sand filtration. Sodium Hypochlorite is used for chlorination.

System Storage
The treatment plants provide 7 MG storage and new additional storage at Mine Brook will provide a total of 8.7 MG.

Existing Interconnections with Neighboring Communities
Walpole has three hard-pipe interconnections. Two are with Norwood. One is on Washington Street and is considered useless for both communities because it is undersized and in poor condition. A second Walpole-Norwood connection is on RT 1 and Union Street and is useful for both communities, although they have not used it in recent years (8”x14”). The remaining interconnection is with Foxborough on Water and North St (8”x6”). This was used for a short period in June 2003.

Existing Water Sharing Agreements
Walpole has a formal water sharing agreement with the Town of Norfolk, supplying approximately six homes. Walpole also supplies 4-5 homes in the town of Sharon and 1-2 homes in Norwood.

Water Demand
Average daily demand in Walpole is typically 2.7 MGD, typical peak day demand is approximately 4.2 MGD and severe peak day demand is approximately 4.5 MGD.

Projected Daily Water Demand at Build Out
The population of Walpole is projected to increase to 29,077, which would require an additional 855,126 gallons/day of water. The total average daily water demand would be approximately 3.5 MGD.

**Comments**

Because Walpole has the capacity to both treat and store water in excess of what they require both daily and at build out, they should consider water sharing. Walpole has suggested utilizing Mine Brook well, which is an unused well in Medfield. Walpole could share with Sharon, Dedham-Westwood, Foxborough, Medfield, or Norwood.
2.3 Foxborough Town Profile

“Located at the intersection of Interstates 95 and 495, Foxborough is 24 miles south of Boston and a growing community of 16,246. Foxborough is known as the home of the New England Patriots. While Foxborough is proud of these and other high profile businesses, the town also desires to retain a small town community feeling (EOEA, 1999).”

Current Water Supply Sources
Water is sourced solely from groundwater resources in the Taunton and Neponset River Basins. Water is supplied from 11 gravel pack wells located in 5 wellfields throughout the town of Foxborough. Small sections of town receive water from Mansfield or Sharon due to proximity of water main locations. Two more wells in the Witch Pond Well Site (Ten Mile River Basin) are undergoing permitting, and the town is actively exploring the potential for deep bedrock wells.

System Permitted Withdrawal Capacity
Foxborough is permitted to pump no more than 6.3 MGD (DEP).

Treatment Components
Sodium Hexametaphosphate is added to water to sequester iron and manganese, and sodium hypochlorite is added as a disinfectant. Sodium hydroxide is used as a pH control to prevent corrosion of pipes. Fluoride is not added to the water.

System Storage
1 MG storage tank at the stadium, 1 MG storage tank on Main Street, and 3 MG storage tank on Hill Street, for a total of 5 MG.

Existing Interconnections with Neighboring Communities
Interconnections exist with Mansfield, Sharon, Walpole, Wrentham, and Plainville; however, pressures are such that these connections only have an outbound function. Foxborough does not typically share water, but did so in 2003 during an emergency situation for a short period of time.

Existing Water Sharing Agreements
Foxborough has no formal water sharing agreements with any surrounding towns.

Water Demand
Average Daily demand in Foxborough is typically approximately 2.1 MGD and typical peak day demand is approximately 3.5 MGD.

Projected Daily Water Demand at Build Out
The population of Foxborough is projected to increase to 21,495, which would require an additional 895,863 gallons/day of water. The total average daily water demand would be approximately 2.8 MGD.
Comments
Foxborough’s water demand is far less than their permit capacity, both at current conditions and at projected build out. If Foxborough needed to pump at permit capacity (6.3 MGD) during peak demand, they are limited by storage capacity (5 MGD), and should consider adding extra storage.
2.4 Medfield Town Profile

“Medfield is an historic suburban town located on a rugged upland watershed area and the adjacent river meadow in eastern Massachusetts. It is 19 miles southwest of Boston and 29 miles north of Providence. Medfield was the site of major native settlements and of early European settlements. The early economic base of the community was agriculture and cattle raising with some dairying and orchards, and the community gradually evolved from a front line frontier town to a moderately prosperous rural town with little development outside of farming and grazing. In the 19th century, straw-hat making became a significant business in town, recording over one million dollars worth of goods for one manufacturer alone in 1875. Presently, the town has a major suburban population of 12,273 and is very proud of its restored and preserved 18th and 19th century buildings (EOEA, 1999).”

Current Water Supply Sources
Water is supplied from five groundwater supply wells. Wells 1, 2 and 6 are located in the Charles River Aquifer, and wells 3 and 4 are located in the Neponset River Aquifer. Well 5 (located near Mine Brook in the Neponset River Watershed) was not developed due to high levels of iron and manganese. Well 6 (Route 27 in the Charles River Watershed) can supply winter water demand for the town, providing the opportunity for other supply wells to recover.

System Permitted Withdrawal Capacity
Medfield is permitted to pump no more than 4.6 MGD.

Treatment Components
Sodium hydroxide is added to source water to neutralize acidity at all five well sites before it enters the water system. Additionally, wells 1 and 2 are treated for PCE removal with an air stripper.

System Storage
There are two water storage tanks, Mt. Nebo Storage Tank and the Medfield State Hospital Storage Tank, for a total storage of 2 MG.

Existing Interconnections with Neighboring Communities
Medfield has no hard pipe interconnections. They have one hydrant-to-hydrant interconnection with Norfolk, with a pipe that is currently buried so they can revisit it as an emergency source. Medfield has also shared (hydrant-to-hydrant) with Millis.

Existing Water Sharing Agreements
Medfield has acquired 0.5 MGD water supply rights from the former Medfield State Hospital. Medfield currently supplies Dover Sherborn High School and Junior High School with water for irrigation. There is no specific agreement as to how much is supplied to them, however they are not considered a “big customer”.
Average Daily Water Demand
1.4 MGD (DEP)

Projected Daily Water Demand at Build Out
The population of Medfield is projected to increase to 13,160, which would require an additional 70,660 gallons/day of water. The total daily water demand would be approximately 1.5 MGD.

Comments
Medfield should consider increasing storage capacity because currently, they can store less than half (2 MGD) of what they are capable of pumping (4.6 MGD).
2.5 Sharon Town Profile

“Sharon is a growing town of 17,500 people midway between Boston and Providence. It is approximately 9 miles west of Brockton and 19 miles south of Boston. An active network of civic organizations, shared appreciation of the diversity of its population and a cherished history make Sharon a vibrant community. Sharon remains a place of natural beauty. It is the site of Massachusetts Audubon Society's first wildlife sanctuary, 350-acre Lake Massapoag, and Borderland State Park. Despite recent development, the town has maintained much of the green space and sparkle that made it a popular summer resort before World War II (EOEA, 1999).”

Current Water Supply Sources
Water is supplied from six active groundwater supply wells. Three wells are located in the Canoe River Watershed, and three wells are located in the Neponset River Watershed. Recent attempts to permit a new well were unsuccessful, and one well with high iron and manganese levels can only be used for peak demand.

System Permitted Withdrawal Capacity
Sharon is permitted to pump no more than 3.1 MGD.

Treatment Components
Water is treated for corrosion with sodium hydroxide and is also disinfected with sodium hypochlorite. Fluoride is added to the water.

System Storage
Sharon has 1.5 MG of useable storage in four storage tanks.

Existing Interconnections with Neighboring Communities
Sharon has two hard pipe interconnections with Foxborough. A connection also exists with Canton, which has not been used in over twenty years. They are currently looking at extending water mains to the Norwood line.

Existing Water Sharing Agreements
Sharon has no formal water sharing agreements with any surrounding towns

Average Daily Water Demand
1.2 MGD. Peak demand in 2002 was 2.6 MGD.

Projected Daily Water Demand at Build Out
The population of Sharon is projected to grow to 21,523, which would require an additional 470,964 gallons/day of water. The total daily water demand would be approximately 1.7 MGD.
Comments
If the population of Sharon reaches buildout, then the projected average daily demand of 1.7 MGD will exceed their useable storage capacity of 1.5 MGD. In addition, Sharon does not have a treatment plant for water, suggesting that if water were to be supplied from another town, it would have to be pretreated, or a system would have to be constructed for treatment. Both Walpole and Foxborough have potential to share with Sharon. One hard pipe connection already exists for Foxborough, but one would have to be constructed for Walpole.
2.6 Dedham-Westwood Town Profiles

“Dedham is a thriving town of 23,464 residents, about 10 miles from Boston and 33 miles northeast of Providence. It is an historic suburban industrial town and is the site of the earliest surviving framed house in New England, the handsome 1737 Fairbanks House. The 10.7 square mile community received its grant as a town in 1636, placing it among the oldest communities in the state. Dedham became the county seat for Norfolk County and the courthouse was built in 1796, bringing in trained, educated and ambitious lawyers and officials who changed the face of the community by investing in and supporting industrial development. Woollen mills were developed in Dedham and innovations such as power broadlooms were introduced. Everything from pianos to furniture was made in Dedham, including famous Dedham crackleware pottery. In addition, Dedham has a remarkably well-preserved town center and abundant historical architecture with many handsome, historic houses and buildings (EOEA, 1999).”

“Westwood is an established community of 14,000 located 13 miles southwest of Boston. Situated at the junction of Routes 95/128 and 93, Westwood provides an excellent location for its residents and its businesses (EOEA, 1999).”

Current Water Supply Sources
Water is supplied from 11 groundwater supply wells in the Charles and Neponset River Basins. One well requires shut down when the Neponset River is low. Dedham-Westwood has also recently joined the MWRA for a modest non-emergency connection of up to 100,000 gallons per day on an annual daily average.

System Permitted Withdrawal Capacity
Dedham-Westwood is permitted to pump 7.5 MGD (DEP) from local sources.

Treatment Components
There are two water treatment plants in Dedham-Westwood district, one in the Charles River Basin, and the other in the Neponset River Basin. These plants generally treat iron and manganese, and the Neponset plant also treats VOCs with an air stripper. Aeration is also planned for the Charles River plant to treat 1.5 MGD. Total treatment capacity for the two treatment plants is 7 MGD. Disinfection is accomplished with the addition of sodium hypochlorite.

System Storage
A 0.8 MG storage tank has been replaced with a 2 MG storage tank. There are three additional tanks storing 1.1 MG, 0.438 MG, and 1.2 MG for a total storage of 4.74 MG.
Existing Interconnections with Neighboring Communities
Dedham-Westwood has an emergency interconnection with both MWRA and BWSC, and hydrant connections to Norwood. Dedham-Westwood will pay MWRA per gallon used on an emergency basis. Dedham-Westwood has also recently joined the MWRA for a modest non-emergency connection of up to 100,000 gallons per day on an annual daily average.

Existing Water Sharing Agreements
Dedham-Westwood currently has six month water emergency agreements with MWRA for 0.1 MGD. They have also applied for 0.5 MGD of supplemental water from the MWRA.

Water Demand
Average daily water demand is typically 4.25 MGD. Peak day demand is typically 6.1 MGD and has gone as high as 7.2 MGD in severe situations.

Projected Daily Water Demand at Build Out
The population of Dedham is projected to grow to 25,873, which would require an additional 207,754 gallons/day of water. The total daily water demand would be approximately 4.5 MGD. The population of Westwood is expected to reach 16,545, requiring an addition 249,593 gallons/day of water. The projected daily water demand would total 1.3 MGD. In total, the future water demand for Dedham-Westwood at buildout is 5.8 MGD.

Comments
Dedham-Westwood is currently pumping 4.3 MGD, which is close to their storage capacity of 4.74 MGD. They should consider increasing storage capacity because they have the capacity to treat up to 7 MGD. Dedham Westwood has potential to share with Medfield and receive water from Walpole and Medfield.
2.7 Norwood Town Profile

“European settlers came to Norwood in the late 17th century, attracted by the Neponset River, the driving force of development throughout the next two centuries. The population grew through the 18th century, and in 1872 Norwood became a town. Between the years 1872 and 1922, industry replaced agriculture as the economic base of the community. The influx and assimilation of immigrants has placed Norwood among the most culturally diverse towns of its size and type in New England. Industrial development continued in Norwood through the mid-20th century. After World War II a gradual shift to high tech occurred in Norwood. Major corporations have found Norwood's proximity to Boston attractive for business. Norwood is 14 miles south of Boston, 15 miles north of Brockton and 30 miles north of Providence. The town of 29,000 is now considered one of the more important manufacturing, suburban-residential, and wholesale and retail trade centers south of Boston (EOEA, 1999).”

Current Water Supply Sources
100% of Norwood town water is supplied by MWRA. Norwood is seeking to reactivate an abandoned well under Buckmaster pond which would provide an additional 1 MGD. This well would have to be treated for iron, manganese, and VOCs.

System Permitted Withdrawal Capacity
Not Applicable. Norwood receives 3.3 MGD from MWRA.

Treatment Components
MWRA treated

System Storage
Norwood has 4.5 MG of storage.

Existing Interconnections with Neighboring Communities
Norwood has four MWRA connections, plus two hard connections with Walpole (Boston Providence Highway), one with Dedham-Westwood (hard pipe connection on University Ave.) and a backup to MWRA.

Existing Water Sharing Agreements
Norwood is not permitted to share water because their water is provided by MWRA.

Water Demand
Typical average daily water demand is 3.3 MGD with a peak demand of approximately 4.9 MGD.

Projected Daily Water Demand at Build Out
The population of Norwood is projected to grow to 30,191, which would require an additional 592,682 gallons/day of water. The total daily water demand would be approximately 3.8 MGD.
Comments
Norwood is currently in the process of rehabilitating old cast iron water mains, as well as attempting to reactivate an existing well. They are planning a pilot pump test for this well, which if successful, could provide an up to one MGD. While Norwood has a number of hard pipe connections to other towns that would allow it to receive water, Norwood can not be a water donor without formal approval by MWRA and DEP.
2.8 Regional Analyses

Table 2. Summary of Water Supply, Storage and Treatment Capacities in MGD

<table>
<thead>
<tr>
<th>Town</th>
<th>Storage Capacity</th>
<th>WMA Permitted Volume</th>
<th>Treatment Capacity/Day</th>
<th>Maximum Delivery Capacity*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedham-Westwood</td>
<td>4.7</td>
<td>7.5</td>
<td>7.0</td>
<td>7.5</td>
</tr>
<tr>
<td>Medfield</td>
<td>2.0</td>
<td>4.6</td>
<td>n/a</td>
<td>4.6</td>
</tr>
<tr>
<td>Norwood</td>
<td>4.5</td>
<td>n/a</td>
<td>n/a</td>
<td>4.5</td>
</tr>
<tr>
<td>Walpole</td>
<td>8.7</td>
<td>7.2</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Foxborough</td>
<td>5.0</td>
<td>6.3</td>
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<td>6.3</td>
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<tr>
<td>Sharon</td>
<td>1.5</td>
<td>3.1</td>
<td>n/a</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>26.4</td>
<td>28.7</td>
<td>14.0</td>
<td>33.0</td>
</tr>
</tbody>
</table>

*Maximum Delivery Capacity is the lesser of WMA permitted volume and treatment capacity. Actual delivery capacity irrespective of WMA limitations may be higher or lower depending on hydrologic conditions and the operating conditions of individual sources.

Table 3. Water Treatment by Town

<table>
<thead>
<tr>
<th>Town</th>
<th>Filtration or Other</th>
<th>Fluoridation?</th>
<th>Chlorine Added?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedham-Westwood</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Foxborough</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Medfield</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Norwood</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sharon</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Walpole</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table 4. “Donatable Surplus” Under Various Demand Scenarios, in MGD

<table>
<thead>
<tr>
<th>Town</th>
<th>Typical Average Day Demand</th>
<th>Typical Peak Day Demand</th>
<th>Max Delivery Capacity (table 2)</th>
<th>“Donatable” Under Average Demand</th>
<th>“Donatable” Under Peak Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedham-Westwood</td>
<td>4.2</td>
<td>7.2</td>
<td>7.5</td>
<td>3.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Medfield</td>
<td>1.4</td>
<td>5.0</td>
<td>4.6</td>
<td>3.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Norwood</td>
<td>3.3</td>
<td>4.9</td>
<td>4.5</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Walpole</td>
<td>2.7</td>
<td>4.4</td>
<td>7.0</td>
<td>4.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Foxborough</td>
<td>1.3</td>
<td>3.3</td>
<td>6.3</td>
<td>5.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Sharon</td>
<td>1.2</td>
<td>2.6</td>
<td>3.1</td>
<td>1.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>14.1</td>
<td>27.4</td>
<td>33.0</td>
<td>18.9</td>
<td>6.4</td>
</tr>
</tbody>
</table>
3. REGULATORY CONTEXT

Supplying water is a highly regulated activity in the state of Massachusetts and sharing water between communities raises a number of potential permitting and regulatory issues. As part of this project, clarification is being sought from the Mass DEP and the Mass Water Resources Commission as to how sensible water sharing arrangements can fit within the requirements of the Water Management Act and the Interbasin Transfer Act. Pending a more formal determination by these agencies, we are providing this brief discussion of regulatory considerations.

3.1 Inter-Basin Transfer Act

The Interbasin Transfer Act or “IBTA” is administered by the Massachusetts Water Resources Commission, which is charged with issuing Inter Basin Transfer Act Permits. Under the IBTA, a jurisdictional “interbasin transfer” is defined as any transfer of water that moves between two of the state’s 27 major watersheds AND moves across a town line. A transfer can be initiated through water supply activities alone or through a combination of water supply and wastewater management activities.

Interbasin transfer by water supply occurs when water is withdrawn in one basin, and moved across town and watershed lines by water supply distribution piping. This type of transfer would occur if a town located in the Charles River Watershed (such as Medfield) were to receive water withdrawn from a different town (such as Walpole) located in the Neponset River Watershed.

Transfers also occur when water is moved across both a town and watershed line through a combination of water supply and wastewater disposal. This type of transfer could occur if a town located in the Neponset River Watershed (such as Norwood) were to receive water withdrawn from a different town in the Neponset River Watershed (such as Sharon). If the recipient town (Norwood) disposes of “used drinking water” via the MWRA sewer system, which then carries the water outside the Neponset Watershed, the IBTA is triggered.

It is also important to note that there is no minimum regulated transfer volume under the IBTA. Transfers of with an annual daily average volume of one MGD or more are presumed to be significant under the IBTA. The handling of smaller volumes is determined on a case-by-case basis through a request for determination of applicability process.

Because the IBTA has no minimum volume threshold, and because the towns in the study area are located in three different watersheds, determining how a regional water sharing agreement should be treated under the IBTA is somewhat complex.

In evaluating the applicability of the IBTA to this project there are several important considerations to bear in mind:

- The NEWS MOU contemplates sharing only during emergency situations, not in situations where one community might want to receive shared water simply to avoid imposing outdoor watering restrictions or to meet other non-essential needs.
• The NEWS MOU only covers water sharing for a period of 30 days per “water sharing event.” Longer term sharing events will be very unusual and will require situation specific discussions between both communities and regulators.

• The IBTA does not apply to any activities authorized under a DEP Water Supply Emergency Declaration. Virtually all serious water supply emergencies where one community might need to receive substantial amounts of shared water from one or more donors will require a DEP Emergency Declaration anyway, and therefore the IBTA will not apply to such situations.

• Most of the towns in the study are have supply sources located in more than one watershed. Therefore a donation of water might theoretically be made only from a town’s Neponset wells, thereby avoiding an interbasin transfer.

• Most sharing events will involve providing water only to a small portion of the recipient community, rather than to the community as a whole. Thus in many situations, water may not actually be crossing watershed lines.

In light of the above, the number of potential sharing situations that trigger IBTA jurisdiction will be substantially reduced. Furthermore, it seems unlikely that a sharing event subject to the IBTA would exceed a total volume of 30 million gallons. Therefore the authors believe that sharing under this agreement can reasonably be considered insignificant under the IBTA.

Table 5: Summary of Potential IBTA Applicability in Various Sharing Situations

<table>
<thead>
<tr>
<th>Donor</th>
<th>Dedham-Westwood</th>
<th>Medfield</th>
<th>Norwood</th>
<th>Walpole</th>
<th>Foxborough</th>
<th>Sharon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedham-Westwood</td>
<td>n/a</td>
<td>Possible (via water or sewer)</td>
<td>Probable (via sewer)</td>
<td>Possible (via water or sewer)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Medfield</td>
<td>Possible (via water or sewer)</td>
<td>n/a</td>
<td>n/a</td>
<td>Possible (via water or sewer)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Norwood*</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Walpole</td>
<td>Possible (via water or sewer)</td>
<td>Possible (via water or sewer)</td>
<td>Probable (via sewer)</td>
<td>n/a</td>
<td>Possible (via water)</td>
<td>Possible (via water)</td>
</tr>
<tr>
<td>Foxborough</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Possible (via water or sewer)</td>
<td>n/a</td>
<td>Possible (via water)</td>
</tr>
<tr>
<td>Sharon</td>
<td>n/a</td>
<td>n/a</td>
<td>Probable (via sewer)</td>
<td>Possible (via water or sewer)</td>
<td>Possible (via water)</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Water donated by Norwood will never trigger the IBTA since MWRA policy allows sharing only under a DEP Emergency Declaration
3.2 Water Management Act

The Water Management Act or “WMA” is administered by DEP. Most water withdrawals with annual daily average volumes of 100,000 GPD or greater are regulated under a Water Management Act Permit. Almost all the communities in the study area are regulated by WMA permits to greater or lesser degree. The DEP has recently adopted a number of new, stricter standards under the WMA designed to minimize the impact of water supply activities on instream flows.

The DEP is in the process of reviewing all the WMA permits in the study area, and modifying permit conditions to bring them into compliance with the new WMA policy. One effect of these permit revisions may be to effectively reduce maximum permitted withdrawal amounts for some communities below current levels. This will in turn reduce the volume of water that communities could share in the absence of a DEP emergency declaration.

In addition, the new permits will likely make it important for communities to account for water use more carefully in order to meet the caps and ratios imposed by the new policy. In theory, a donor community could push itself over its caps or ratios by responding to the emergency needs of their neighbor. As discussed above for the IBTA, sharing under this agreement is expected to be infrequent, of short duration and of relatively small volume. Therefore the authors believe that this should not be a substantial problem in practice.

To fully mitigate this potential accounting problem, the MOU recommends that recipient communities include donated volumes in their Annual Statistical Reports and in computation of caps and ratios. The MOU further recommends that donor communities clearly segregate donated volumes on their Annual Statistical Reports and omit donated volumes from computations of seasonal ratios and per capita water use.
4. WATER SUPPLY INTERMUNICIPAL CONNECTIONS

GeoSyntec collected information from each of the study area municipal water suppliers on the location and condition of each connection to a neighboring community. This information is reported as a narrative in the community profiles in Section 2 of this report. The purpose of this exercise was to document existing mechanisms to physically exchange water between communities in the event that a short-term emergency water supply need arises. In addition, GeoSyntec created a GIS map of these connections, as well as the location of terminal points in each public water supply distribution system.
Table 6. Existing Interconnections

<table>
<thead>
<tr>
<th>Town</th>
<th>Connection with</th>
<th>Intermunicipal</th>
<th>MWRA</th>
<th>Potential Donatable Volume (MGD) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharon</td>
<td>Foxborough</td>
<td>2 @ 8 in</td>
<td>n/a</td>
<td>1.5</td>
</tr>
<tr>
<td>Dedham</td>
<td>Westwood</td>
<td>1 @ 36 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westwood</td>
<td>Norwood</td>
<td>1 @ 10 in</td>
<td>1 @ 36 in</td>
<td>4.5</td>
</tr>
<tr>
<td>Norwood</td>
<td>Foxborough</td>
<td>2 @ 8 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walpole</td>
<td>1 @ 8 in</td>
<td></td>
<td>5</td>
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<tr>
<td>Foxborough</td>
<td></td>
<td>1 @ 8 in</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Walpole</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NOTE: Actual volume depends on pipe size, pressure, and location of donor and recipient

Under this project, the communities expressed an interest in design drawings and details, including cost estimates to create permanent interconnections. GeoSyntec subcontracted with Green International Affiliates, Inc. to prepare three options for inter-municipal water supply connections. The options are presented in design details found in Appendix E.

- Option 1 presents a dual meter pit;
- Option 2 presents a single meter pit with dual meters; and
- Option 3 presents a single bi-directional meter.

These drawings and specifications can be used by each community as a basis for specific municipal water supply interconnections in the future. In addition, an engineering cost estimate for each option was developed (Table 4). Engineering cost estimates range from $39,000 to $84,000 to complete a water supply interconnection. The cost estimates and drawing are designed for future use by the communities when preparing bids and specification for future water supply interconnections.
Table 7. Neponset Emergency Water Supply (NEWS) Project Water Supply Connections Cost Estimate*

<table>
<thead>
<tr>
<th>Item</th>
<th>Option 1 Dual Meter Pits</th>
<th>Option 2 Single Meter Pit w/Dual Meters</th>
<th>Option 3 Single Bi-directional Meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precast Concrete Chamber</td>
<td>2-(12’x 6’x 7’) $24,000</td>
<td>1-(12’x 8’6’x 7’) $14,000</td>
<td>1-(12’x 6’x 7’) $12,000</td>
</tr>
<tr>
<td>Ductile Iron Piping (6” to 12” dia.)</td>
<td>150 LF $19,500 to $21,000</td>
<td>75 LF $9,750 to $10,500</td>
<td>25 LF (straight) $3,250 to $3,500</td>
</tr>
<tr>
<td>Gate Valves (6” to 12” dia.)</td>
<td>6 $9,000 to $9,600</td>
<td>4 $6,000 to $6,400</td>
<td>2 $3,000 to $3,200</td>
</tr>
<tr>
<td>Manhole Frame and Covers</td>
<td>4 $1,600</td>
<td>2 $800</td>
<td>2 $800</td>
</tr>
<tr>
<td>Mechanical Couplings</td>
<td>6 $7,200</td>
<td>6 $7,200</td>
<td>3 $3,600</td>
</tr>
<tr>
<td>Meter w/Equipment and Transmitter (6” to 12” dia.)</td>
<td>2 $18,000 to $20,000</td>
<td>2 $18,000 to $20,000</td>
<td>1 $17,000 to $19,000</td>
</tr>
<tr>
<td>Total Cost Range for 6” dia. to 12” dia. pipe</td>
<td>- $79,000 to $84,000</td>
<td>- $55,000 to $60,000</td>
<td>- $39,000 to $42,000</td>
</tr>
</tbody>
</table>

*Note: Costs include all labor, materials and installation. Prepared by: Green International Affiliates, Inc.
NEPONSET EMERGENCY
WATER SUPPLY (NEWS) PROJECT

MEMORANDUM OF UNDERSTANDING FOR
INTERMUNICIPAL EMERGENCY WATER SHARING

AMONG
WALPOLE
FOXBOROUGH
SHARON
MEDFIELD
NORWOOD
DEDHAM-WESTWOOD

IN THE NEPONSET RIVER WATERSHED

GeoSyntec Consultants
289 Great Road, Suite 105
Acton, MA 01720
Telephone: (978)-263-9588
Fax: (978)-263-9594

Neponset River Watershed Association
490 Chapman Street
Canton, MA 02021
Telephone: (781)-575-0354
Fax: (781)-575-9971
A Memorandum of Understanding made this _______ day of __________, 200___ by and among the Towns of Foxborough, Medfield, Norwood, Sharon and Walpole and the Dedham-Westwood Water District, regarding consultation on water management issues of common interest and short-term sharing of public water resources among the parties during emergency situations.

The towns of Foxborough, Medfield, Norwood, Sharon, and Walpole, and the Dedham-Westwood Water District (referred to herein collectively as the Neponset River Emergency Water Supply Collaborative or NEWS) enter into this Memorandum of Understanding:

- In recognition of the common interests of the parties in effective, coordinated regional management of water resources;
- To provide a forum for consultation among the parties about common water management concerns that affect their economic and social well-being;
- To provide for short-term sharing of water among the parties during emergency situations; and
- To protect and maintain the value of water resources in the Neponset River Watershed.

The parties recognize the benefits of consultation on water management issues of common concern that might be the subject of shared investigation and resolution on a regional basis.

The parties also recognize that system failures, contamination episodes, maintenance requirements, severe drought conditions and other emergency situations may cause short-term reductions in water supply in any of the communities, and that there are mutual benefits to providing for sharing of water among the communities under these conditions.

Operation of this agreement does not depend on a declaration of a water supply emergency by the Massachusetts Department of Environmental Protection (DEP) under M.G.L. Chapter 21G §§ 15-17. Nothing in this agreement alters the parties’ responsibilities associated with a declaration of a water supply emergency by the DEP, nor any applicable permits under the Water Management Act, Interbasin Transfer Act or other state of federal regulatory authority.

The parties agree as follows:

1. Definitions

**Annual statistical report** – A report required annually by the DEP describing the water supply activities of all Water Management Act permittees and registrants.

**Consumer confidence reports (CCR)** - annual reports provided by Public Water Suppliers to customers on drinking water quality required by the 1996 Safe Drinking Water Act Amendments.

**DEP** – Massachusetts Department of Environmental Protection

**Donor party** – a municipality or water district that donates water to a recipient party under this agreement.

**Interbasin transfer** - Any transfer of surface, groundwater or wastewater outside of its river basin of origin, as defined by the WRC. A transfer must cross both a basin boundary and a
municipal boundary to be considered an interbasin transfer. Interbasin transfers are governed by 313 CMR 4.00.

**MWRA** – Massachusetts Water Resources Authority

**NEWS** – Neponset Emergency Water Supply Collaborative

**Parties** – all the municipalities and/or water districts which are signatories to this Memorandum

**Recipient party** – a municipality or water district that receives water from a donor party under this agreement.

**Responsible authority** – the elected official, board or commission which has ultimate statutory authority for decisions regarding water supply activities for each party including the authority to negotiate long term water sharing agreements. The current responsible authority for each party is listed in the appendix to the Memorandum.

**Water designee** – the individual, as designated by each party’s responsible authority, to whom has been delegated the authority to initiate a water sharing event as either donor or recipient party. The current water designee for each party, along with their contact information is listed in the appendix to the Memorandum.

**Water resources management plan** - a local plan to meet water needs within a city or town, submitted by the chief elected official or designee to the Water Resources Commission pursuant to the regulations of the Commission (313 CMR 4.00).

**Water sharing event** - An individual instance during which one or more donor parties provide water to a recipient party for a period of up to 30 days under the terms of this agreement.

**Water supply emergency or emergency** – A short-term reduction of water supply due to system failure, contamination, severe drought, system maintenance or other unforeseen circumstances. However, an emergency shall not include any situation where water supply is insufficient due solely to normal, seasonal peak-demands.

**WRC** – Massachusetts Water Resources Commission

### 2. General

2.1 The objectives of this Memorandum are to develop and maintain:

- a forum for sharing information and for discussions among the parties about water management issues of common concern;
- a structure for conducting joint investigations of water supply issues, developing policies, programs or management plans, and undertaking mutually beneficial water supply projects, as may be agreed to by the parties; and
- a comprehensive, equitable and workable arrangement for sharing water among the parties during short-term, emergency situations, consistent with applicable regulations and the policies agreed by the group.

2.2 Nothing in this agreement affects long-term arrangements for water sharing or transfer reached by any of the parties.
2.3 The parties agree, so far as they are able within their respective jurisdictions, to implement the polices and strategies made or adopted by mutual agreement under this Memorandum and to make management decisions and allocate resources accordingly.

3. Water Sharing Coordinating Committee
A Water Sharing Coordinating Committee will be established to oversee the implementation of the Memorandum and facilitate achievement of its stated objectives.

3.1 The Water Sharing Coordinating Committee (the Coordinating Committee), shall be comprised of one representative of each party, along with a representative of the Massachusetts Water Resources Authority, and a representative of the Neponset River Watershed Association. The parties will be represented by persons responsible for water resources management and environmental responsibilities in each municipality, preferably being superintendents and or chairpersons of their respective water and sewer or public works department.

3.2 In pursuing the objectives of this Memorandum, members of the Coordinating Committee will act within their existing powers and subject to the laws and regulations of state and federal government.

3.3 The decisions of the Coordinating Committee will be by full agreement of all its members.

3.4 The Coordinating Committee will meet once each year or as considered necessary or desirable by the parties.

3.5 The Coordinating Committee will, establish and set terms of reference for working groups (which may include private consultants or contractors and other parties) as required to perform specific tasks.

3.6 By agreement, one of the Coordinating Committee Members will serve as a fiscal agent for jointly funded projects and/or grant funded projects as agreed upon by the parties.

3.7 Each party will host meetings of the Coordinating Committee and provide support services for the meetings, in turn.

3.8 The Neponset River Watershed Association shall initially provide staff support for coordinating the basic functions of the Coordinating Committee such as scheduling meeting times, soliciting recommended agenda items, receiving and disseminating Water Sharing Event Report Forms and the like.

3.9 Committee approval is not required for one or more parties to initiate a water sharing event under this agreement.

3.10 The Coordinating Committee will identify any changes to individual Public Water Supply Water Resources Management Plans that are required to implement the provisions of the Memorandum. The parties commit, to the best of their ability, to make those changes as soon as possible.
4. **Water Sharing Conditions**

4.1 No donor party is expected or required to supply water to another party if doing so would create a health or safety problem for its own customers.

4.2 This agreement does not affect arrangements among the parties for non-emergency sharing of water or any other intermunicipal arrangements.

4.3 Donor parties assume no liability or obligations associated with provision of water to recipient parties under the provisions of this agreement, other than those obligations specifically stated in this agreement or required under state or federal laws and regulations.

4.4 A water sharing event, lasting for a period up to 30 days, may be initiated, as needed, by the water designees of the donor and recipient parties, subject to the conditions of this agreement. Emergency water sharing beyond 30 days requires approval of the responsible authority for each party.

4.5 Before initiating a sharing event, the water designees of the recipient and donor parties shall confer regarding any potential for problems resulting from incompatible water chemistry, including but not limited to potential problems resulting from chloramination. The parties shall take reasonable measures to minimize potential water chemistry problems.

4.6 Recipient parties requesting water sharing under this agreement will immediately implement water use restrictions to minimize the amount of water requested. These restrictions will be at least as stringent as any water use restrictions in place at the time in the donor community.

4.7 A donor party may or may not, at its own discretion and acting through its normal approval process, adopt additional water use restrictions in order to provide water requested by another party to this agreement. The donor party will consider and respond to such requests from a recipient community promptly.

4.8 At a donor party’s request, the recipient may be charged the supplied water and reimbursement of costs as shall be agreed between the designees at the time of the request.

4.9 Each party is responsible for all obligations associated with detection of violations of federal or state water quality standards. A donor party will immediately notify the recipient party in the event that violations are detected in their water supply. The recipient party will notify its customers as required by the applicable public notification requirements.

4.10 Each recipient party assumes full responsibility for providing all required Drinking Water Consumer Confidence Reports (CCRs) to their water customers, including a reference to the CCR of the donor party when water sharing has taken place during the reporting year. Donor parties are not responsible for providing CCRs to residents in the recipient community. Donor communities will, however, provide the recipient community water designee with monitoring data and other information that will enable the buyer to produce the CCR for its residents as soon as this data and information are available.
4.11 A recipient community that does not add fluoride to its water supply will notify its customers about the presence of fluoride in any water received from a donor party that does add fluoride to its water. A recipient community that fluoridates its water supply will notify its customers about the absence of fluoride in any water received from a donor party that does not add fluoride to its water.

4.12 The water designee for the recipient community in each water-sharing event under this agreement will submit a report using the attached Report Form within 60 days of the start of water sharing. The report will be submitted to the Neponset River Watershed Association, and will be distributed at the following meeting of the Coordinating Committee.

4.13 Requests to initiate a water sharing event by a recipient party that does not normally receive water from the Massachusetts Water Resources Authority (MWRA) from the MWRA either directly or via an intermediate donor community must comply with all provisions of MWRA’s Emergency Water Supply Withdrawals Policy OP.05. These provisions include requirement for a declaration of a water supply emergency by the DEP and submission of required information by the recipient party to the MWRA.

4.14 Whenever it is practical to do so, parties are encouraged to use a reliable method to measure or estimate the amount of water shared during a water sharing event.

4.15 Whenever they are preparing their annual statistical reports for submission to DEP, both donor and recipient communities should clearly show the amount of water shared and note the circumstances, which made the water sharing event necessary. Donor communities are encouraged to exclude volumes shared under this agreement from computation of residential GPCD and summer-winter ratio when preparing their Statistical Report. Recipient communities are encouraged to include shared volumes in their computation of residential GPCD and summer-winter ratio when preparing the Statistical Report. Note however, that the DEP has neither approved nor disapproved this method for reporting shared water on the Annual Statistical Report.

4.16 Any sharing of water that results in an interbasin transfer is subject to the requirements of the Massachusetts Interbasin Transfer Act (M.G.L. Chapter 21 Sections 8B-8D and regulations 313 CMR 4.0) and the review of the Water Resources Commission. [ADD any WRC Conditions Here]. Note however that emergency water sharing implemented under the auspices of a DEP Emergency Declaration is exempt from the requirements of the Interbasin Transfer Act.

4.17 No donor community is empowered by virtue of this agreement to pump or deliver water in excess of amounts authorized by applicable Water Management Act or Interbasin Transfer Act limits in order to fulfill a request from a donor community, unless such excess pumping or delivery is implemented under the auspices of a DEP Emergency Declaration.

4.18 No donor community is expected nor required by this agreement to bring on-line water supplies that would require an emergency declaration from DEP in order to provide water to a recipient community.
5. **Modification, Termination, and Additional Conditions**

5.1 This memorandum may be modified or amended at any time by mutual agreement of all parties in writing.

5.2 Any party may terminate participation in this agreement upon sixty (60) days prior written notice to all other parties.

5.3 This memorandum does not restrict the parties from participating in water sharing with other public or private agencies, organizations, and individuals. All parties recognize the importance of cooperation and participation with organizations and institutions in programs of mutual interest.

5.4 The parties intend to conduct the activities contemplated in this agreement in accordance with existing authorities. If any provisions of this memorandum are determined to be inconsistent with applicable laws or regulations, then the provisions of this memorandum not affected by a finding of inconsistency shall remain in full force and effect.
## Agreement Signed by:

### Town of Foxborough:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Printed Name</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>

### Town of Medfield:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Printed Name</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>

### Town of Norwood:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Printed Name</th>
<th>Title</th>
<th>Date</th>
</tr>
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### Town of Sharon:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Printed Name</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>

### Town of Walpole:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Printed Name</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>

### Dedham Westwood Water District:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Printed Name</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>
## Attachment A

### RESPONSIBLE AUTHORITIES AND WATER DESIGNEES

<table>
<thead>
<tr>
<th>Responsible Authority</th>
<th>Water Designee Name/Title</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town of Foxborough Water &amp; Sewer Dept.</td>
<td>Leo Potter Water &amp; Sewer Superintendent</td>
<td>Foxboro Water and Sewer Dept. 40 South Street Foxborough, MA 02035</td>
<td>508-543-1209</td>
<td>508-543-6278</td>
<td><a href="mailto:lpotter@mail.town.foxborough.ma.us">lpotter@mail.town.foxborough.ma.us</a></td>
</tr>
<tr>
<td>Town of Medfield Dept. of Public Works</td>
<td>Kenneth Feeney Superintendent of Public Works</td>
<td>Medfield Dept. of Public Works 459 Main Street Medfield, Ma 02052</td>
<td>508-359-8505</td>
<td>508-359-4335</td>
<td><a href="mailto:kfeeney@medfield.net">kfeeney@medfield.net</a></td>
</tr>
<tr>
<td>Town of Norwood Board of Selectmen</td>
<td>Gary Schorer Asst Superintendent of Public Works</td>
<td>Norwood Dept. of Public Works 1 Lyman Place Norwood, Ma 02062</td>
<td>781-762-1413</td>
<td>781-762-9378</td>
<td><a href="mailto:gschorer@ci.norwood.ma.us">gschorer@ci.norwood.ma.us</a></td>
</tr>
<tr>
<td>Town of Sharon Board of Selectmen</td>
<td>Eric Hooper Superintendent of Public Works</td>
<td>Sharon Dept. of Public Works PO Box 517 Sharon, MA 02067</td>
<td>781-784-1525</td>
<td>781-784-1508</td>
<td><a href="mailto:ehooper@townofsharon.org">ehooper@townofsharon.org</a></td>
</tr>
<tr>
<td>Town of Walpole Water and Sewer Commission.</td>
<td>Rick Mattson Water &amp; Sewer Superintendent</td>
<td>Walpole Sewer and Water Department 135 School Street Walpole, MA 02081</td>
<td>508-660-7309</td>
<td>508-660-7323</td>
<td><a href="mailto:rmattson@th.walpole.ma.us">rmattson@th.walpole.ma.us</a></td>
</tr>
<tr>
<td>Dedham Westwood Water District Board of Water Commissioners</td>
<td>Nan Crossland Executive Director</td>
<td>Dedham Westwood Water District PO Box 9137 Dedham, MA 02027</td>
<td>781-329-7090</td>
<td>781-329-8737</td>
<td><a href="mailto:ncrossl@aol.com">ncrossl@aol.com</a></td>
</tr>
</tbody>
</table>

### ADDITIONAL COORDINATING COMMITTEE MEMBERS

<table>
<thead>
<tr>
<th>Agency</th>
<th>Committee Member Name/Title</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts Water Resources Authority</td>
<td>Lise Marx Program Manager, Planning Dept.</td>
<td>MWRA Charlestown Navy Yard 100 First Avenue Boston, MA 02129</td>
<td>617-788-4390</td>
<td>?</td>
<td><a href="mailto:Lise.marx@mwra.state.ma.us">Lise.marx@mwra.state.ma.us</a></td>
</tr>
<tr>
<td>Neponset River Watershed Assoc.</td>
<td>Ian Cooke Executive Director</td>
<td>NepRWA 490 Chapman Street Canton, MA 02021</td>
<td>781-575-0354</td>
<td>781-575-9971</td>
<td><a href="mailto:cooke@neponset.org">cooke@neponset.org</a></td>
</tr>
</tbody>
</table>
Neponset Emergency Water Supply (NEWS)

WATER SHARING EVENT
REPORT FORM

The following communities and water suppliers agreed to share or transfer water under the provisions of the Neponset River Emergency Water Supply Project (NEWS) Memorandum of Understanding for Intermunicipal Short-Term Water Sharing

Donor party _________________________________
(name of community and water supplier)

Recipient party _______________________________
(name of community and water supplier)

Water sharing began on ____________ and ended ______________.
[start date]      [end date]

Brief description of reason for water sharing: ___________________________________
__________________________________________________________________________
__________________________________________________________________________

Approximate quantity of water transferred: ________________ gallons.

Source, destination and method of water transfer:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Describe water conservation measures in place during the event:
Recipient community:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Were these measures specifically related to the event resulting in the need for water sharing?  [  ] yes  [  ] no

Donor community:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Were these measures specifically undertaken to make water available for this sharing?  [  ] yes  [  ] no
Was the donor community reimbursed for water provided? [ ] yes [ ] no
Amount of reimbursement $______________________

Were there any violations of drinking water standards or differences in town water quality (such as fluoridation) that required notification to the recipient community? [ ] yes [ ] no Describe:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Did this sharing involve an interbasin transfer? [ ] yes [ ] no Describe:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Submitted by (recipient party):

Water Designee . Printed Name Title Date

Submit report to:
Neponset River Watershed Association
Ian Cooke
2173 Washington Street
Canton, MA 02021
Tel: 781-575-0354 ~ Fax: 781-575-9971
cooke@neponset.org
APPENDIX B

Details for Intermunicipal Connections
Appendix C
# Neponset Emergency Water Supply Project (NEWS)
## Steering Committee Contact Information
Names in bold are primary contacts for each organization or community

### NepRWA Staff
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Department</th>
<th>Address</th>
<th>Phone 1</th>
<th>Phone 2</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ian Cooke</td>
<td>Executive Director</td>
<td>Neponset River Watershed Assoc.</td>
<td>490 Chapman Street, Canton, MA 02021</td>
<td>781-575-0354</td>
<td>781-575-9971</td>
<td><a href="mailto:cooke@neponset.org">cooke@neponset.org</a></td>
</tr>
<tr>
<td>Jessica Stevens</td>
<td>Water Resource Analyst</td>
<td>Neponset River Watershed Assoc.</td>
<td>490 Chapman Street, Canton, MA 02021</td>
<td>781-575-0354</td>
<td>781-575-9971</td>
<td><a href="mailto:stephens@neponset.org">stephens@neponset.org</a></td>
</tr>
</tbody>
</table>

### DEP
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Department</th>
<th>Address</th>
<th>Phone 1</th>
<th>Phone 2</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kathleen Romero</td>
<td>DEP Drinking Water Program</td>
<td>One winter Street, 6th floor</td>
<td>Boston, MA 02108</td>
<td>617-292-5727</td>
<td></td>
<td><a href="mailto:Kathleen.romero@state.ma.us">Kathleen.romero@state.ma.us</a></td>
</tr>
</tbody>
</table>

### Foxborough
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Department</th>
<th>Address</th>
<th>Phone 1</th>
<th>Phone 2</th>
<th>Email</th>
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<tbody>
<tr>
<td>Leo Potter</td>
<td>Superintendent</td>
<td>Foxborough Water &amp; Sewer Dept.</td>
<td>40 South Street, Foxboro, MA 02035</td>
<td>508-543-1209</td>
<td>508-543-6278</td>
<td><a href="mailto:lpotter@mail.town.foxborough.ma.us">lpotter@mail.town.foxborough.ma.us</a></td>
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</tbody>
</table>

### MWRA
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Department</th>
<th>Address</th>
<th>Phone 1</th>
<th>Phone 2</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephen Estes-Smargiassi</td>
<td>Director, Planning Department</td>
<td>MWRA</td>
<td>Charlestown Navy Yard, 100 First Avenue, Boston, MA 02129</td>
<td>617-788-4303</td>
<td>617-788-4888</td>
<td><a href="mailto:smargias@mwra.state.ma.us">smargias@mwra.state.ma.us</a></td>
</tr>
</tbody>
</table>

### Dedham-Westwood
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Department</th>
<th>Address</th>
<th>Phone 1</th>
<th>Phone 2</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nan Crossland</td>
<td>Executive Director</td>
<td>Dedham Westwood Water District</td>
<td>Po Box 9137, Dedham, MA 02027</td>
<td>781-329-7090</td>
<td>781-329-8737</td>
<td><a href="mailto:ncrossl@aol.com">ncrossl@aol.com</a></td>
</tr>
</tbody>
</table>

### Medfield
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Department</th>
<th>Address</th>
<th>Phone 1</th>
<th>Phone 2</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenneth P. Feeney</td>
<td>Superintendent of Public Works</td>
<td>Medfield Dept. of Public Works</td>
<td>459 Main St, Medfield, MA 02052</td>
<td>508-359-850x600</td>
<td>508-359-4335</td>
<td><a href="mailto:kfeeney@medfield.net">kfeeney@medfield.net</a></td>
</tr>
</tbody>
</table>

### Project Consultant
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Department</th>
<th>Address</th>
<th>Phone 1</th>
<th>Phone 2</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve Roy</td>
<td>Project Consultant</td>
<td>GeoSyntec Consultants</td>
<td>629 Massachusetts Ave, Boxborough, MA 01719</td>
<td>978-263-9588</td>
<td>978-263-9594</td>
<td><a href="mailto:sroy@geosyntec.com">sroy@geosyntec.com</a></td>
</tr>
</tbody>
</table>

### Lise Marx
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Department</th>
<th>Address</th>
<th>Phone 1</th>
<th>Phone 2</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lise Marx</td>
<td>Program Manager, Planning Dept.</td>
<td>MWRA</td>
<td>Charlestown Navy Yard, 100 First Avenue, Boston, MA 02129</td>
<td>617-788-4390</td>
<td></td>
<td><a href="mailto:lise.marx@mwra.state.ma.us">lise.marx@mwra.state.ma.us</a></td>
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Boston, Canton, Dedham, Dover, Foxborough, Medfield, Milton, Norwood, Quincy, Randolph, Sharon, Stoughton, Walpole, Westwood
Norwood

**John Carroll**  
Town Manager  
Norwood Town Hall  
566 Washington St  
Norwood, MA 02062  
781-762-1240 phone  
781-762-9180 fax  
jcarroll@ci.norwood.ma.us

**Bernard Cooper**  
Assistant Town Manager  
Norwood Town Hall  
566 Washington St  
Norwood, MA 02062  
781-762-1240 phone  
781-762-9180 fax  
bcooper@ci.norwood.ma.us

**Bill Oliver**  
General Foreman,  
Water and Sewer Division  
Norwood Dept. of Public Works  
1 Lyman Pl  
Norwood, MA 02062  
781-762-1413 phone  
781-762-9378 fax  
gschorer@ci.norwood.ma.us

**Gary Schorer**  
Assistant Superintendent  
Norwood Dept. of Public Works  
1 Lyman Pl  
Norwood, MA 02062  
781-762-1413 phone  
781-762-9378 fax  
gschorer@ci.norwood.ma.us

**Joseph Welch**  
Superintendent of Public Works  
Norwood Dept. of Public Works  
1 Lyman Pl  
Norwood, MA 02062  
781-762-1413 phone  
781-762-9378 fax  
jwelch@ci.norwood.ma.us

Sharon

**Erich Hooper**  
Superintendent of Public Works  
Sharon Dept. of Public Works  
Po Box 517  
Sharon, MA 02067  
781-784-1525 phone  
781-784-1508 fax  
ehooper@townofsharon.org

**Dave Masiarelli**  
Water Division Supervisor  
Sharon Water Department  
S Main St  
Sharon, MA 02067  
781-784-1525 phone  
781-784-1508 fax  
dmasciarelli@townofsharon.org

Walpole

**Rick Mattson**  
Superintendent  
Walpole Sewer & Water Dept.  
135 School St  
Walpole, MA 02081  
508-660-7309 phone  
508-660-7323 fax  
rmatsson@th.walpole.ma.us

**William Abbott**  
Commissioner  
Walpole Sewer & Water Dept.  
william.abbott@ca.com

**Steven Davis**  
Commissioner  
Walpole Sewer & Water Dept.  
38 William St  
Walpole, MA 02081  
508-668-2944 phone  
steven.davis@bain.com

**Roger Turner**  
Commissioner  
Walpole Sewer & Water Dept.  
PO Box 305  
Walpole, MA 02081  
508-668-2237 phone  
508-668-0531 fax  
rfturner@gis.net
Appendix D
Attending:
Jessica Stephens and Ian Cooke (NepRWA), Nan Crossland (Dedham-Westwood), David Masciarelli and Eric Hooper (Sharon), Rick Mattson, Scott Gustuffson, Robert O’Brien, Roger Turner and Steven Davis (Walpole), Ken Feeney and Neil MacKenzie (Medfield), Lisa Marx (MWRA) Leo Potter (Foxborough), Gary Schorer (Norwood)

Meeting came to order at approximately 10:10.

After a round of introductions, Ian Cooke gave a brief recap of the project goals, funding sources and timetable. Thanks to DEP and EPA for making this project possible. The group then proceeded into brief presentations from each water supplier about their water systems:

**Walpole** - Walpole’s infrastructure has the capacity to pump up to 9 MGD, but is limited through permits to a peak withdrawal of 6 MGD and an annual average of 3.25 MGD. These figures omit the pumping capacity of an additional existing but unutilized well that could be pressed into service in an emergency. They have two treatment plants, the one on School Meadow Brook is green sand with capacity of 4 MGD and the one on Mine Brook is membrane filtration with capacity of 3 MGD. They are in the process of adding additional storage which will provide a total of 8.7 MG of storage. Their highest recorded demand was 5.1 MGD, with a typical, unrestrained peak demand of 4.4 MGD, and a average daily demand of 2.7 MGD of which only 1.8 MGD is billed due to high unaccounted for water. In general they feel the have about 1 MGD of surplus capacity under normal conditions. They also indicated that even when they lack surplus pumping capacity, they would still have surplus treatment capacity, if raw water could be delivered to the treatment plant from outside sources such as Medfield’s currently unused Mine Brook well. Refer also the system description handouts which Walpole provided.

**Foxborough** - Foxborough has a total of 12 wells one of which is inactive, but hopefully coming back online soon. They also have two new wells going through IBTA permitting in the Witch Pond area. They have six pump stations and one booster station. There is a 1 MG storage tank at the stadium, a 1 MG tank on Main Street and a 3 MG tank on Hill Street, for total storage of 5 MG. Their average demand is about 1.3 MGD with a summer peak demand of 3.8 MGD. There are existing interconnections with
Sharon, Walpole, Wrentham, Plainville, though pressures are such that most of these connections function outbound only. Water treatment is minimal consisting primarily of corrosion control. Foxborough does not add fluoride to its water.

**MWRA** - The MWRA system is obviously quite different from any of the local systems, but the MWRA does have regular service connections to Canton and Norwood, and an emergency connection to Dedham-Westwood. Storage capacity in the Southern Extra High System is in West Roxbury and is generally not considered “overly robust.” The MWRA is evaluating the creation of additional storage for this part of the system.

**Medfield** - Medfield has five wells with a total capacity of 4.6 MGD: the primary Charles River well with capacity of 1.6 MGD, two additional Charles Basin wells with VOC problems and combined capacity of 1 MGD, and two Neponset/Mine Brook Wells with capacity of 2 MGD total. They also have another unused Neponset/Mine Brook Well with a capacity of 1 MGD that is out of use because it needs treatment for color which is economically impractical right now. Finally, Medfield has acquired .5 MGD of “water rights” from the former Medfield State Hospital. Treatment consists solely of pH and corrosion except for two of the Charles Basin wells which have a package plant for VOC’s. These wells are run only on a peak, seasonal demand basis only. Total peak capacity is currently limited by treatment rather than pumping. They have 2 MG of storage. Winter demand is typically 1 MGD, with an average summer demand of 3 MGD and peak summer demands of 5 MGD. They have year round odd even voluntary water bans, and when demand gets too high they go to mandatory bans. Medfield has activated temporary interconnections with Norfolk and Millis.

**Sharon** - Sharon has a mandatory 1hour, two day per week year round water restrictions. They have 1.5 MG of useable storage. Winter demand is about 1.3 MGD compared to a 2002 maximum demand of 2.6 MGD. Unaccounted for water is below 10%. They have six active wells (three Neponset and three Canoe River Watershed) with a permitted pumping limit of 3.1 MGD. Total pumping in 2002 was 550 MG compared to a permit limit of 660 MG. Sharon has no treatment other than corrosion and fluoride. One well has iron and manganese issues and is used only to meet perk demands. Recent attempts to permit a new well were unsuccessful. Sharon has two hard pipe interconnections with Foxborough and one with Canton. They have had hydrant to hydrant interconnections with Stoughton, Canton, Norwood, Walpole and Mansfield. It is difficult to find new sources in town given their position at the head of two watersheds with relatively thin aquifers. There has been some discussion of bringing supplemental desalinized water into town.
Dedham-Westwood Water District - Dedham-Westwood has about 12,700 service connections. They have ten wells in the Charles and Neponset Basins. The newest was installed in 1997, but must be shut off when flows in the Neponset get too low. Average demand is about 4.25 MGD, and under peak demand they have pumped up to 7.2 MGD. They have two treatment plants (one Charles, one Neponset) designed primarily for iron and manganese. Neponset plant includes VOC’s. In spite of VOC’s now being below detect, they continue to operate the stripper for general water quality benefits. As a result they are also planning to install aeration for 1.5 MGD at the Charles plant as well. They are in the process of renovating some wells with satellite wells. Went to total water ban except for hand watering in 3 gallon bucket last August. D-W has an emergency connection to MWRA and BWSC, as well as hydrant connections to Norwood. Given difficulty of developing new wells D-W is applying to MWRA for 0.5 MDG supplemental water. They have many pump stations and are in the process of replacing an old 0.8 MG storage tank with a 2 MG storage tank. Generally their supplies are fine on average day conditions, but its peak days that are the problem.

Norwood - Town of Norwood is supplied 100% by MWRA with 29,000 residents, and a 120 mile distribution system. They have 4 MWRA connections, plus two hard connections with Walpole, one with Dedham-Westwood & another backup to MWRA. Average demand is 3.3 MGD, with a 4.9 MGD peak. Norwood has 4.5 MG of storage. Half of the system has water quality problems caused by discoloration from unlined cast iron pipes. They are in the process of seeking permits to reactivate an abandoned well under Buckmaster Pond in Westwood with a goal of 1 MGD. This would involve extensive new piping and construction of a treatment plant in Norwood for VOCs, iron, and manganese.

The group then had a wide-ranging discussion of the kinds of emergency scenarios that should be considered, potential obstacles to emergency water sharing; and the types of municipal agreements that might best facilitate such sharing.

Scenarios - Clearly, the worst-case scenario for both the recipient and donor would be an emergency during a peak demand period. Thus the basic scenarios to evaluate would be each community’s peak demand/surplus capacity with strict water bans imposed, and the same considerations under conditions. It might also be desirable to evaluate both of those scenarios but basing surplus capacity on maximum infrastructure capacity rather than maximum permit capacity.
Regulatory Obstacles

- How would water sharing affect the donor and recipient’s responsibilities for preparing Consumer Confidence Reports (Lisa Marx has experience with preparing joint CCR with Cambridge)? Can DEP waive these requirements?

- If the donor were to have a water quality violation while providing water to a recipient, would the donor be obligated to do public notice in the recipient community as well as their own community?

- Particularly in our area on the borders of the Neponset, Charles and Taunton Basins, many emergency water-sharing arrangements would trigger IBTA jurisdiction. Can we clarify under what circumstances the WRC would be willing to waive that jurisdiction?

- There is a wide range of attitudes toward issuing an emergency declaration among the various DEP regional offices. With some offices imposing conditions unrelated to the emergency at hand. Is it possible to get DEP buy-in or pre-approval for this kind of emergency water sharing plan?

- All towns have more pumping capacity from an engineering standpoint than they can use under permit restrictions designed to protect the environment. Is it possible to get approval from DEP to exceed these permit limits on a temporary, emergency basis as part of this kind of regional assistance program? Medfield State Hospital example.

- Walpole has suggested the possibility of using their excess treatment capacity to make raw water from another community available during an emergency (i.e. pump raw water at Medfield’s unused Mine Brook well, run a temporary water line to Walpole’s Mine Brook treatment plant, and then distribute the treated water to Norwood via a Walpole-Norwood interconnection). What might be the permitting obstacles to such sharing of treatment capacity, beyond the WMA and IBTA?

Engineering and Water Chemistry Issues:

- Are there likely to be any water chemistry compatibility problems between the various systems?

- Are pressures matched such that interconnections can operate by gravity? While you can always create additional pressure temporarily with a fire truck, would there be other ways to temporarily reconfigure the donor and/or recipient systems so that they could work on gravity?
• Will donor systems be able to maintain pressure for their own customers with the emergency connection open?

• Is it feasible to perform water wheeling? Pump water in a donor community, pass it through the system of an intermediate community and have it utilized by a third recipient community?

• What means are available, and at what cost, to provide temporary or permanent metering at hard pipe or hydrant-to-hydrant interconnections?

Social, Political and Inter-municipal Agreement Issues

• What legal and or political issues would be created if the donor’s water is fluoridated and the recipient’s is not, i.e. forced medication issues?

• What is the definition of an emergency? It was generally agreed that this project is talking about water sharing only where contamination or mechanical failure produces an immediate threat to public health or safety in the recipient community.

• How far would the donor community be expected to go? It was generally agreed that while all communities are willing to assist in a true emergency, no donor community would be expected to render assistance if doing so would create a significant health or safety issue for its own customers.

• It was generally agreed that for political credibility reasons, any recipient would have to impose a very strict outdoor water ban, at least as strict as that imposed in the donor community. There was discussion of establishing a mutually agreed upon definition of a strict water ban that could be built into the inter-municipal agreement. There was a discussion of whether this should be a total water ban, or whether it should be a handheld, one day per week ban which many felt was equally or more effective because of the cheating factor associated with a total ban.

• All agreed that their community would be willing to impose a strict water ban on its own residents if needed to free up capacity so that assistance could be rendered to a neighbor experiencing a sincere emergency situation. Everyone also agreed that they believed that doing so would free up at least .5 MGD of donation capacity.

• It was observed that one advantage of formal agreements is that such an agreement is required in order for MEPA to reimburse the donor community for an emergency in the recipient community.

• It seemed to be generally agreed that anything more than minimal costs incurred by the donor community should be reimbursed by the recipient. There was also
some concern that the donor would not want to see the recipient making a “profit” during the emergency by buying donated water wholesale and selling it retail. There was some discussion of how to determine what compensation should be paid to the donor. The prevailing wholesale MWRA rate was suggested as one measure. The lowest step rate in the donor’s increasing block rate structure was suggested as another alternative. Yet another possibility would be to determine the retail value of the donated water by determining the percentage of total demand met through the donation, and setting the compensation at that percentage of the recipient’s total billings for the emergency period. This brought up the metering question raised above.

- It was agreed that the inter-municipal agreements should be implemented at the lowest level which has the requisite authority in each town, i.e. if the sewer commission has the authority don’t go to the selectmen, if the selectmen have the authority don’t go to town meeting. Concern was raised that each town has a different decision making structure. It will be necessary to consult the individual town charters to determine who would be the best signatory in each town.

- It was also agreed that the inter-municipal agreement would be primarily designed to address emergency situations of short duration. However, it should cover a period long enough to allow a thorough evaluation of longer term options and negotiation of longer-term agreements. With this in mind, it seems that the agreements should cover the period from the initial emergency event out to three or at most six months.

- The group discussed whether other models of such agreements might exist. The MWRA agreements were suggested along with the Canoe River Aquifer Advisory Committee agreement (an unsuccessful model). It was also suggested that we check with DEP, MMA and law firms that do a lot of municipal work like Copelman and Paige.

The meeting closed with a request that each community provide their system data to the consultant in electronic format if at all possible. The consultant will also likely be contacting individual communities with more specific questions. The group will plan to meet again in a few months once the preliminary analysis has been conducted.

Meeting adjourned 11:45 AM
Meeting came to order at approximately 9:30

Discussion began regarding community interconnections

**Walpole** - Walpole has three hard-pipe interconnections. Two are with Norwood-One is on Washington Street and is considered useless for both communities because it is undersized and in poor condition. A second is on RT 1 and Union and is useful for both communities, although they have not used it in recent years (8”x14”). The remaining interconnection is with Foxborough on Water and North St (8”x6’’). This was used for a short period last June. There are no other permanent connections. Additional water supply facts: Mine Brook Well # 2 was recently activated and will provide an addition 1-2 MGD. A new 1.5 MG storage tank was put online in October.

**Foxborough** - Foxborough has interconnections with Sharon and Walpole, as well as Mansfield, Wrentham, and Plainville. Walpole and Mansfield can provide water to Foxborough, but there are pressure differentials. They do not typically share water, but did this year during an emergency situation for a short period of time. Additional water supply facts: They have one inactive well in the Neponset but are looking into Fe and Mn treatment to make it potable. In the summer, water bans are a way of life, and private wells do not have an impact on town supply.

**MWRA** - The MWRA system currently supplies Norwood, Canton, Dedham-Westwood, and Stoughton with either full or emergency water supplies. If communities were to receive water from an MWRA serviced system, then the MWRA would have to be involved with the donor community. MWRA has short term 30 day emergency supply agreements, and longer term 6 month agreements. After 30 days, towns need to reapply for water.
Medfield - Medfield has no hard pipe interconnections. They have one hydrant to hydrant interconnection with Norfolk, with a pipe that is currently buried so they can revisit this as an emergency source. Medfield has also shared (hydrant to hydrant) with Millis. They also supply Dover Sherborn high school with a small amount of water for irrigation purposes. Additional water supply facts: Medfield has acquired the water rights to Medfield State Hospital, but the tubular well system on the property is in disrepair. The town has allocated funds to update the gravel pack wells and increase capacity. They may get 0.5 MGD from this site. There is currently a proposal for a golf course on the old property, which would require a great deal of water for irrigation purposes.

Sharon - Sharon has 2 hard pipe interconnections with Foxborough. They also have one with Canton, which has not been used in over twenty years. They are currently looking at extending water mains to the Norwood line. Additional water supply facts: Sharon is currently looking at treating well # 6 for Fe and Mn so they can utilize more of it, more often. They have also been actively looking for new water supply within the town, but have had no success. They generally always have self-imposed water restrictions. Sharon uses KOH, not NaOH for water treatment.

Dedham-Westwood Water District – Dedham - Westwood has interconnections with MWRA, Boston Water and Sewer as well as a hydrant-to-hydrant interconnection with Norwood. They currently have 6 month water emergency agreements with MWRA for 0.1 MGD. Additional water supply facts: Private wells in Zone II areas are regulated by the District Board of Health and can regulate private wells if they effect the public water supply.

Norwood - Norwood has 4 MWRA connections, plus two hard connections with Walpole (Boston Providence Highway), one with Dedham-Westwood (hard pipe connection on university ave) and a backup to MWRA. Additional water supply facts: Norwood is currently in the process of rehabilitating old cast iron water mains as well as attempting to reactivate an existing well. They are planning a pilot pump test for this well, and it could provide up to 1 MGD.

The discussion switched gears to what the towns wanted to include in the MOU. The following topics/points were discussed.

- CCR- Each town would supply their own Consumer Confidence Report to their customers, and if the town received water from a donor community for a short period of time, the CRR of the receiving town would refer the community to read the CCR of the donor community.
- Coliform detects- the recipient of donor water will assume all responsibility for a coliform detection in their town even if it came from the donor town. Coliform detect violations would have to go out to each town.

- Fluoridated water- Foxborough is the only community that does not add fluoride to their water. If they share water, the receiving community will be responsible for notifying their people that the water does not have fluoride, and vice versa.

- The participants spoke about the possibility of exceeding Water Management Act permit capacity in order to supply emergency water to other towns. It was decided that towns do not want the headache of permitting, dealing the DEP, additional research and monitoring related to pumping exceedences.

- There was much discussion of the definition of an actual emergency and it was decided that MOU will use the DEP definition of an emergency. M.G.L., c. 21 G 15-17:

“Water supply emergency” means one of the following situations.

“Short-term water supply emergency” means the problem has been identified and can be remedied quickly and is not expected to recur. (Short-term water supply emergencies do not include water supply emergencies that occur repeatedly for the same reason. That type of water supply emergency indicates a more serious, longer-term problem and will be classified as an interim or a long-term water supply emergency).

“Interim water supply emergency” means that additional sources have been identified or are in the process of being developed or that water sources which had been previously closed will be brought back on line.

“Long-term water emergency” means that no permanent solution to the state of water supply emergency has been identified.

The Water Sharing Agreement (MOU) will be crafted to respond to a community need for water prior to a formal DEP emergency declaration. In effect, the MOU will serve as a document to codify and document the type of informal water sharing arrangements that currently occur among these communities and districts.

The towns all felt this was a good definition and would provide communities with authority to make “legal” decisions regarding water sharing.
• All towns agreed that while all communities are willing to assist in a true emergency, no donor community would be expected to render assistance if it would create a health or safety issue for its own customers.

• Water sharing time frame: The towns decided that 30 days is a good starting point for towns to agree upon for water sharing. The initial decision for a town to become a donor will be made at the water and sewer division level. Before the 30 days is up, the recipient community should determine if they need an extension. If an extension is needed, then it will have to be brought to the elected officials.

• POLITICS: any recipient would have to impose a very strict outdoor water ban, at least as strict as that imposed in the donor community. Concerns were brought up regarding public criticism (e.g.) Sharon has trouble getting water from one end of town to the other- how will it look if they begin supplying water to other towns before they remedy their own supply issues.

• There needs to be a general clause in the MOU that states something like; should the donor request money for costs incurred in the sharing of water, an agreement should be worked out between the donor and recipient. Towns did not want to include specific costs for water and wanted to work it out on a case-by-case basis.

• LIABILITY- there needs to be a clarification of liability in the MOU so that elected town officials will agree to the MOU.

• AUTHORITY-Selectmen will have legal authority over the MOU (signatures) but authorize superintendents to make water-sharing decisions without having to consult selectmen in each emergency situation. Each town charter will dictate who has the authority as well as the approval process for the MOU.

• Documentation: each emergency should be documented in a brief form outlining: donor, recipient, gallons pumped, reason for sharing etc.

• Reciprocity- the MOU needs to demonstrate sharing between all towns (not just one town typically receiving all of the water- or MWRA being sole source looked upon for sharing).

The meeting closed with a request that each community provide some brief anecdotes to GeoSyntec regarding recent water emergency situations that have required the sharing of water between towns. GeoSyntec will be providing draft MOUs and maps to each water system. GeoSyntec also offered to provide basic engineering evaluations to each town.

Meeting adjourned at 11:00 AM.
Neponset Emergency Water Supply Project
Summary Meeting Minutes
Friday, September 24, 2004
Walpole Town Hall

Attending:
Ian Cooke (NepRWA), Nan Crossland (Dedham-Westwood), Steve Roy (GeoSyntec Consultants) Eric Hooper (Sharon), Rick Mattson, Scott Gufstavson and Roger Turner (Walpole), Ken Feeney and Ed Hinkley (Medfield), Leo Potter (Foxborough)

Meeting came to order at approximately 9:10 AM

DISCUSSION OF MOU
Dedham-Westwood Commissioners had discussed the MOU several times and seemed generally amenable but referred to comments previously submitted by Weston and Sampson re: chloramine. As it currently stands there are no chloramines incompatibilities among the systems (with exception of MWRA) though changes are possible in the future. An additional question was raised on ability of partial MWRA communities to share water without going through MWRA. Follow up with the MWRA is needed.

Both Foxborough and Sharon had discussed it generally favorably, and had referred to town counsel, which coincidentally is the same firm. Walpole had also discussed it and also sent on to town counsel. The Medfield Board had discussed it and felt the agreement didn’t add sufficient value to justify signing on, although the superintendent indicated interest in participating in future meetings on an informational basis.

NepRWA reviewed the MOU with DEP. They seemed generally supportive but raised several areas where the implementation of the MOU may be more complex due to new WMA policy. It was agreed that further follow up was needed with DEP. Steve Roy reported on conversations with the WRC who were also supportive but seemed a bit confused. More follow up with the WRC is needed. It was agreed that some additional “wordsmithing” of the MOU could also help address the issues raised by the DEP and WRC.

REMAINING TO DO ON MOU
- NepRWA to follow up with DEP
- NepRWA to do some “wordsmithing” and draft additional paragraphs on water chemistry, checking valves, measuring and accounting for shared water
• Geosyntec to follow up with WRC and MWRA (chloramine and sharing by partial communities)

• Walpole, Sharon and Foxborough to forward any town counsel comments to NepRWA/Geosyntec

• NepRWA will follow up with Norwood who was not in attendance at the meeting

• Based on above, NepRWA/Geosyntec will circulate final draft to committee

• Final MOU will then be circulated to communities for up or down vote.

DISCUSSION OF ENGINEERING REPORT

GeoSyntec indicated that the sub-consultant doing the engineering report has been slow to get mobilized. GeoSyntec will follow up with the firm and if necessary find an alternate MBE firm. Savarin and C&C Consulting were suggested as possibilities.

It was also agreed that a standard connection design should be used for the analysis, involving an arrangement of four lockable valves and two check valves. It was also agreed that the standard design should incorporate the facilities needed for temporary or permanent metering at each connection, but with that cost itemized separately.

ENGINEERING REPORT TO DO

• GeoSyntec to follow up with sub-consultant and arrange alternate with NepRWA if needed

• GeoSyntec to circulate draft report to committee

NEXT MEETING

No meeting was scheduled, though it might be desirable to have one more once everything is done.
Neponset Emergency Water Supply Project

Summary Meeting Minutes
Friday, September 24, 2004
At the Walpole Town Hall

Attending:
Ian Cooke (NepRWA), Nan Crossland (Dedham-Westwood), Steve Roy (GeoSyntec Consultants) Eric Hooper (Sharon), Rick Mattson, Scott Gufstavson and Roger Turner (Walpole), Ken Feeney and Ed Hinkley (Medfield), Leo Potter (Foxborough)

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NEXT MEETING
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APPENDIX E

Massachusetts Emergency Water Supply Summary
Massachusetts Emergency Water Supply Summary

Massachusetts Handbook for Water Supply Emergencies: Summary

The following presents a summary of the current drinking water emergency response actions required by the State of Massachusetts. Each public water supply should have a copy of the full handbook in their possession for compliance with the state drinking water regulations.

Water supply emergencies in the state of Massachusetts are regulated by Massachusetts General Laws Chapter 21G, Sections 15-17, and 310 CMR 22. The Drinking Water Program of the Massachusetts Department of Environmental Protection has prepared a Handbook for Water Supply Emergencies (August, 2002) for use by public water systems in the event of an emergency situation. This handbook can be found online at http://www.state.ma.us/dep/brp/dws/standard.htm.

This handbook summarizes procedures for the management of water resources not only during daily activities, but also in the event of adverse, emergency conditions. Emergency situations are differentiated based upon five different criteria, and appropriate state and federal contacts, reporting procedures, and response actions are outlined. Also included in this document, are guidelines for the prevention of acts of terrorism, which would include contamination of public water supplies or destruction of public water system facilities.

Emergency events are categorized as follows:

**Level I- ROUTINE PROBLEMS**
Level I applies to minor incidents/disruptions affecting 10% or less of the system. These incidents are anticipated to be resolved with 24 hours. Example: water main break.

**Level II- ALERT/ MINOR EMERGENCIES**
Significant disruption to the system affecting 50% or less of the system and anticipated to be repaired within 72 hours. Example: coliform detects, mechanical problems at pump stations.
**Level III-MAJOR EMERGENCIES**
Very significant disruptions to greater than 50% of the system, requiring greater than 72 hours for resolution. May require Declaration of Water Supply Emergency and/or Boil Water Order, Do Not Drink Order, or Do Not Use Order. Example: Failure of treatment facility, vandalism, E. Coli detect.

**Level IV-NATURAL DISASTERS**
Meteorological or geological event causing a disruption to greater than 50% of the system and requiring greater than one week for system recovery. Likely requirement of Declaration of Water Supply Emergency and/or Boil Water Order, Do Not Drink Order, or Do Not Use Order. Example: Earthquake, tornado.

**Level V-NUCLEAR DISASTERS/ MAJOR TERRORIST ACTS**
Large, uncontrolled releases of radioactive material or toxic compounds into the water system, or deliberate acts of sabotage to water system. In the event of nuclear disasters, systems may be impaired within a 50 mile radius. Likely requirement of Declaration of Water Supply Emergency and/or Do Not Drink Order. Example: nuclear power plant disaster

A response action plan for each level is outlined in the handbook. After a public water system (PWS) has determined the appropriate level threat, then they may follow the procedures documented in the handbook. All PWS are sent a copy of this handbook, which also requests that individual PWS draft a Drinking Water Emergency Response Plan (ERP). During sanitary surveys, this document must be available for review. Appendix I of the handbook provides the guidelines for drafting the ERP.

The main text of the document provides the emergency response plans for Levels I-V. The appendices provide the following information:

**Appendix A**
This is a template to fill in all emergency telephone numbers for local authorities, water supply responsible authorities, local news media, and additional emergency contacts such as schools and hospitals. Two copies of this form must be provided to the DEP Boston Drinking Water Program Office, and one must be kept with the PWS ERP.

**Appendix B**
Provides all telephone numbers for state and federal agencies including State Police, DEP, DPH, EPA, OSHA, etc.

**Appendix C**
Provides procedures for contacting the DEP both during working hours, and after hours. These contact procedures specify that local police/fire department must be contacted prior to or simultaneously to contacting the DEP in the event of a drinking water emergency. The DEP will then contact the appropriate offices (e.g. Bureau of Waste Site Cleanup (BWSC), Regional Emergency Response Team etc.).
Appendix D
Provides a chain of procedures for contacting outside agencies and personnel such as how the DEP and Emergency Response Team will categorize the type and level of emergency and execute the appropriate response actions. Examples: mobilizing field crews, alerting the public through media contact etc.

Appendix E
This is an emergency response checklist that must be filled out and submitted to DEP Regional Office within 30 days of a level III or IV emergency. Included in this checklist are items such as incident descriptions, actions involved in the emergency, completed response actions, and authorities and departments contacted.

Appendix F
Provides a template for preparing a news release regarding a PWS emergency.

Appendix G and H
These appendices focus on Total Coliform detections in the PWS. Appendix G is a flowchart to determine any violations for the Total Coliform Rule, and Appendix H is a Coliform Violation Evaluation Survey. This survey must be sent to the DEP Regional Office, and the DEP must be contacted within 48 hours of a coliform detect.

Appendix I
Provides guidelines for developing a PWS ERP including hazard identification, vulnerability assessment of the water system, elements of response action plans, and a list of references to assist in ERP preparation.

Appendix J
This appendix summarizes critical elements of counterterrorism planning. Included in this appendix are: 1) a checklist of security measures for water utilities, 2) infrastructure protection, 3) example threats, 4) potential terrorist profiles, 5) current research and activities relating to counterterrorism, 6) additional concerns, and 7) suggested actions for utilities to undertake.
Appendix F
The purpose of this document is to state Department policy and procedure with regard to declaring, terminating, and extending a state of water supply emergency pursuant to Massachusetts General Law (MGL) c. 21G, sec. 15, 16, and 17 (Water Management Act). The emergency provisions allow the Department to declare a state of water emergency at the request of a public water supplier and to condition the declaration so as to require measures to end the emergency situation. This document also describes the conditions under which a municipal public water supplier may impose local mandatory water use restrictions pursuant to MGL c. 41, sec. 69B. This policy should be read together with the Massachusetts Water Management Act, which contains many important provisions not included in this policy.

Policy

The following policy and procedure shall be followed when processing a petition from a public water supplier for a declaration of a state of water supply emergency in accordance with MGL c. 21G, sec. 15, 16, and 17.

The power granted the Department by Water Management Act does not include the authority to impose a state of water supply emergency on a public water supplier who does not request it. In cases where no request is made by the public water supplier, and the Department finds upon its own investigation that there is an existing or impending shortage of water which endangers public health, safety, or welfare, the Department may issue an administrative order requiring the public water supplier to take specific action to relieve the situation under MGL c. 111, sec. 160.

The Department may also issue orders pursuant to MGL c. 111, sec 160 when it finds upon investigation that measures are necessary to ensure the delivery of a fit and pure water supply to all consumers.

Definitions

“Allowable withdrawal rate” means the maximum day yield divided by the peaking factor.

“Average day demand” means the average daily demand on a water supply system over any one month.

“Contingency plan” means a written plan establishing operating procedures for adequately handling water supply emergencies. The plan shall include provisions for emergency water supply in the event of a sudden loss of existing sources and for a progressively stringent schedule for limiting water use during seasonal and extended dry periods. For the purposes of this policy the Drought and Emergency Procedures/Planning section of the Water Resources Commission’s Water Conversation Plan will serve as a contingency plan.
“Department” means the Department of Environmental Protection.

“Division” means the Department’s Drinking Water Program.

“Drought” means a condition of dryness due to lower than normal precipitation, resulting in effects such as reduced stream flows, reduced soil moisture, and lowering of the potentiometric surface in wells.

“Emergency connection” means any emergency connection either approval pursuant to MGL c. 21G or authorized by law to provide a necessary or adequate water supply and shall include connections to other existing supply systems, the obtaining of water directly from a new source or a previously abandoned source, or the obtaining of greater amounts of water from an existing source.

“Existing demand” means the average daily consumption over the past two years, or such lesser period as the Department may determine to be adequate to provide an accurate figure, based on meter readings.

“Existing water service connection” means an active water supply service including connecting piping and a water meter.

“Increase in existing connection” means any activity which will increase the anticipated consumption of water at an existing meter by more than 10% above the existing demand at that service over the past two years.

“Maximum day yield” means the pumping capacity of all sources based upon 24-hour pumping.

“Moratorium” means restrictions on new connections to a water system.

“New connections” means any new water supply service which requires installation of a new (not replacement) meter, except any particular connection mandated by a court order.

“Peak day demand” means the peak demand in any given month.

“Peaking factor” means two times the existing demand on a system unless a different number is indicated by the historical record.

“Public water supplier” means any city, town, district, water company, public agency or authority of the Commonwealth or its political subdivisions which operates a public water system.

“Public water system” means a system for the provision of the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year.

“Unaccounted for water” means water withdrawn by a purvey or from a source and not accounted for as being delivered to customers.

“Water” means all water beneath or on the surface of the ground whether wholly or partly within the Commonwealth.

“Water bank” means an allocation method which requires that water withdrawn from new water sources, increases in existing water sources, or water recovered through demand management, or other means be divided between new users and the reduction of a water deficit situation.

“Water demand increase” means the projected consumption of water for any new connection or increase in demand in an existing connection recommended to the Department by the municipality for approval. Projections shall be made consistent with good planning practice and shall be verified based on the actual meter reading during the first six months of full operation.

“Water demand decrease” means the projected water savings to be achieved through actions including but not limited to termination of services, reduction in services, installation of permanent water conversation devices, detection and repair of leaks, and rehabilitation of mains. Projections of water savings shall be made consistent with good engineering practices and must be measurable and verifiable.

“Water supply emergency” means one of the following situations.
“Short-term water supply emergency” means the problem has been identified and can be remedied quickly and is not expected to recur. (Short-term water supply emergencies do not include water supply emergencies that occur repeatedly for the same reason. That type of water supply emergency indicates a more serious, longer-term problem and will be classified as an interim or a long-term water supply emergency).

“Interim water supply emergency” means that additional sources have been identified or are in the process of being developed or that water sources which had been previously closed will be brought back on line.

“Long-term water emergency” means that no permanent solution to the state of water supply emergency has been identified.

Department Policy on Water Emergencies

It is the Department’s policy to:

- Ensure that no area served by a public water system will be without water.
- Ensure that public health, safety, and welfare concerns are adequately addressed during any Department declared state of water supply emergency.
- Encourage water conservation as a means to control demand.
- Encourage and assist public water suppliers to develop or expand existing water sources where water supply deficiencies exist which cannot be eliminated through conservation.
- Assist in the resolution of emergency water supply problem(s), and to guide public water suppliers in meeting long-term water supply needs within each area served by the public water system.
- Work with public water suppliers to develop specific and practicable contingency plans and water supply emergency responses and wherever feasible, prior to the issuance of an order by the Division, solicit recommendations from public water supplier seeking an emergency declaration.
- Encourage public water suppliers to develop and implement drought management and contingency plans which become progressively more stringent depending on the seriousness of the state of water supply emergency, the time needed to provide permanent solutions, the availability of emergency relief, environmental impacts on both the users experiencing the emergency as well as other uses who depend, or may in the future depend on any emergency connection.
- Encourage public water suppliers to take advantage of the technical and financial assistance programs offered by the Commonwealth.
- Ensure that any public water supplier receiving water through an emergency connection is taking all reasonable steps to reduce the demand for water for the duration of the state of water emergency.

Locally Imposed Water Use Restrictions

The Department believes it is the best interest of municipal public water suppliers and the Department for communities with properly enacted municipal legislation to impose mandatory water use restrictions during periods of high water demand without requesting a formal emergency declaration from the Department. Pursuant to MGL c. 41, sec. 69B, restrictions that may be imposed through local registration include odd/even day watering bans, prohibitions on filling swimming pools, and the use of automatic sprinkler systems. Persons violating the locally imposed restrictions are subject to civil fines. Before enacting local legislation, municipal counsel should be consulted to ensure the legislation is enforceable and legally valid.

The Department requires all public water systems establishing a mandatory restriction on water use to notify the Department in writing within 14 days of its effective date. In its notice to the Department, the water system shall include all appropriate regulations, by laws, or ordinances establishing and imposing the restriction.

If a public water system is experiencing complex system problems affecting its ability to consistently provide an adequate supply of water, adapting and implementing a bylaw may not address the problem.
The Department strongly suggests that systems experiencing such problems should consider requesting from the Department a declaration of a state of water supply emergency, pursuant to MGL 21G.

The Department has developed a model bylaw for communities wishing to establish enforceable mandatory water use restrictions. Copies of the model bylaw are available from the Water Management Program.

Petitioning For A Declaration Of A State of Water Supply Emergency

Pursuant to MGL 21G section 15, any public water supplier may petition the Department for a declaration of a state of water supply emergency. The Department will review any petition submitted by a public water supplier for a declaration of a state of water supply emergency.

It is the policy of the Department not to approve a petition for a state of water supply emergency from any public water supplier who represents a public water system where a water source has been closed on local authority and that closure is a primary cause of water shortage unless the closure is approved by the Department.

Contents Of A Plan To Bring An End To A State of Water Supply Emergency

Pursuant to MGL 21G section 15, public water suppliers who petition the Department’s for a declaration of a state of water supply emergency must, on DEP request, submit for review and approval, their plan for bringing about an expeditious end to the state of water supply emergency. For the purpose of this policy, public water suppliers will be required to submit as their plan a completed Water Resources Commission Conservation Plan and a written discussion of each of the following:

1. Past water supply emergency situations with this supply system and the cause(s) of such situations.
2. Causes of the present alleged state of water supply emergency.

Situations for which the Department may declare a state of water supply emergency include, but are not limited to, one or a combination of the following:

   a. Mechanical failure or similar type of emergency which results in an inability to meet average daily demand for water, including inability to maintain storage tanks, loss of power, loss of pumping capacity, loss of storage capabilities, or major breaks or leaks.
   
   b. Water Quality Emergencies – contamination of the public water supply, the distribution system or of storage tanks and inability to meet average daily demand with remaining public water supplies.
   
   c. Inadequate source, inadequate distribution system capacity, inadequate storage capacity or drought. This also includes seasonal water shortages which repeatedly affect the same water system.

3. Historical and up-to-date water demand and supply data including a comparison of existing average day demand, maximum day demand, and fire flow requirements with current system pumping capacity, storage capabilities and system safe yield;

4. Estimated length of time that the water supply emergency is expected to exist or continue (six months, one year, or more), and the factors upon which the predicted end of the emergency is based;

5. Any bans or restrictions that are to be implemented immediately or in the future as a result of the state of water supply emergency;

6. A statement describing how the community affected by the emergency will be kept informed of the state of water supply emergency, (through newspaper advertisements, flyers, bill stuffers, etc.);

7. Any rehabilitation projects to upgrade or expand the system that are planned or in progress, including a discussion of how any of these projects may help relieve or eliminate the state of water supply emergency;
8. Identification of any possible interconnection with another public water supplier and their viability. A public water supplier, requesting approval for an emergency connection under MGL 21G section 16, must also indicate whether approval of a Water Bank is being sought.

**Declaring A State Of Water Supply Emergency**

Upon receiving a petition for a declaration of a state of water supply emergency from a supplier the Department may declare a state of water supply emergency if it finds that the demand for water exceeds the availability of water by 10% or there is an existing or impending shortage of water in part or in all of the areas served by the public water system which presents a threat to public health, safety or welfare. The Department will limit the applicability of any state of water supply emergency to the city or town submitting the petition or to the geographical area served by the public water system submitting the petition. Water suppliers whose service area crosses Department regional boundaries shall make submittals to the DEP Boston Office, where all determinations will be made that would normally be made by the appropriate DEP Regional Office, provided, however, that the DEP Boston Office shall consult with the DEP Regional Office prior to making a determination.

**Procedure**

**Verbal Authorization**

Whenever the Department determines that the protection of the public health requires an immediate declaration of a state of water supply emergency, it may verbally authorize a water supply emergency. A verbal authorization of a water supply emergency will be valid for no more than 10 business days unless, and on the condition that the water supplier compiles with the procedures for written authorization set forth below. A written declaration shall be issued as soon as possible after the verbal authorization. The Regional Director will notify Water Management Program staff within 48 hours of issuance of a verbal declaration of a state of water supply emergency.

Under a verbal authorization of a water supply emergency the Department may authorize the public water supplier to augment supply and implement bans or restrictions on certain water uses. Enforcement measures may include fines where authorized by by-law or ordinance and the disconnection or shutoff of service at the meter or curb cock.

**Written Authorization**

1. The public water supplier should submit to the DEP Regional Office in the region where the water supply is located, a written petition for a declaration of a state of water supply emergency along with a plan to bring about an end to the state of water supply emergency.

   The DEP Regional Office may accept an outline of the plan provided that the public water supplier includes a brief discussion of specific action that may be taken immediately to relieve the state of water supply emergency and agrees to submit a complete plan within 30 days of any declaration of a state of water supply emergency.

2. If time and conditions permit, a meeting will be scheduled between the public water supplier and the DEP Regional Office, prior to any declaration of a state of water supply emergency, to discuss the situation in detail and to design conditions and orders accordingly.

3. If it is not possible to arrange a meeting prior to the issuance of a declaration of a state of water supply emergency, the DEP Regional Office may proceed with the following steps, provided that such a meeting with the public water supplier is scheduled. All water supply declarations of a state of water supply emergency and orders issued in this manner should be considered interim measures, and may be changed upon meeting with the public water supplier.

4. The DEP Regional Office will review the petition and the plan to make a final determination as to:
   a. Whether a state of water supply emergency should be declared and;
   b. Whether any such state of water supply emergency should be classified as an interim, short term, or long term state of water supply emergency.
5. If the Regional Director finds that a state of water supply emergency exists the Department will take the following steps.

a. The DEP Regional Office will draft a declaration of a state of water supply emergency and order following the format in Attachment A. Any orders included in the declaration will be specific to the type of water supply emergency and the situation. Requirements may include but are not limited to:

(1) A detailed analysis of existing and future supply and demand
(2) A plan for short-term measures to provide immediate relief to the water supply emergency
(3) A plan for long-term actions designed to prevent recurrence of the emergency
(4) A program for water auditing including installation of water meters
(5) A contingency plan
(6) A plan to implement system rehabilitation
(7) Implementation of a leak detection program
(8) Development of new sources or construction of storage

b. The Department will specify the actions the public water supplier is authorized to take under the declaration of water emergency. These may include but are not limited to:

(1) Bans or restrictions on certain water uses including any necessary enforcement provisions.
(2) Provisions to augment supply
(3) The initiation of water bank as a mechanism to restrict or limit issuences of new water connections.

c. The provision of any order pursuant to a declaration of a state of water supply emergency shall be approved by the Regional Director prior to issuance. A copy of the final declaration of a state of water supply emergency must be forwarded to the Water Management Program staff in Boston.

If the emergency is the result of unusual circumstances or will require restrictions on future connections to the water system, a copy of the draft declaration shall be forwarded to the DEP Boston Office for consultation prior to its issuance.

d. The Regional Director will notify the Water Management Program, the Legislative Liaison, the Commissioner’s Office, the Public Affairs Office (PAO), the Massachusetts Civil Defense Agency and the Department of Public Health at least 24 hours prior to issuance of a written declaration of a state of water supply emergency.

e. The legislative Liaison will notify appropriate legislators and PAO will prepare a press release if appropriate.

f. The DEP Regional Office will prepare and send the final declaration of a state of water supply emergency to the public water supplier, and the Chairman of the Board of Selectman or the Chairman of the City Council and the Mayor or the chief official of the water company or district, as the case may be. The declaration of a state of water supply emergency and order will be sent to the public water supplier by certified mail, return receipt requested, or by hand. The public water supplier may be informed of its contents by telephone prior to delivery.

6. If the Regional Director finds that no state of water supply emergency exists the DEP Regional Office will inform the public water supplier. The DEP Regional Office may request that the public water supplier provide regular updates should the situation warrant such action.
Terminating A State Of Water Supply Emergency

All declared states of water supply emergency will remain in effect for the entire six month period following the date of its issuance unless revoked by the Department. The declaration will be revoked if the Department finds that:

1. The demand for water no longer exceeds available supply;
2. The public health, safety, or welfare is no longer endangered by an existing or impending water shortage in part or all of the area to which the state of water supply emergency applies; and
3. The public water supplier has demonstrated to the Department that each of the following has occurred.
   a. The facts relied upon by the Department in its declaration of the state of water supply emergency have been altered or no longer exist.
   b. The public water supplier has successfully implemented its plan for bringing about an end to the state of water supply emergency and plans for preventing similar occurrences have been developed.
   c. The public water supplier has compiled with, or is taking action to comply with all orders issued with the Department’s declaration of a state of water supply emergency to the satisfaction of the Regional Director.

Procedure For Termination

1. The DEP Regional Office will review the existing state of water supply emergency with the public water supplier.
2. The public water supplier will demonstrate that all conditions of the water supply declaration of a state of water supply emergency and orders have been met and that all conditions for terminating a state of water supply emergency have been met.
3. The DEP Regional Office will make a recommendation to the Regional Director to terminate the state of water supply emergency.
4. When the Regional Director determines that the demand for water no longer exceeds available supply or that public health, safety or welfare is no longer endangered by a water supply shortage, the DEP Regional Office will be notified. The DEP Regional Office will notify the public water supplier and the chairman of the Board of Selectmen or the Chairman of the City Council and the Mayor or the chief official of the district or water company, as appropriate, of the determination in writing. A copy of the termination notice will be forwarded to the Water Management Program staff in Boston.
   a. The Regional Director will notify the Water Management Program, the Legislative Liaison, the Commissioner’s Office, the Public Affairs Office (PAO), the Massachusetts Civil Defense Agency and the Department of Public Health at least 24 hours prior to issuance of a written termination of a declaration of a state of water supply emergency.
   b. The Legislative Liaison will notify the appropriate legislators and PAO will prepare a press release if appropriate.
   c. The DEP Regional Office will prepare and send the termination of a declaration of a state of water supply emergency to the public water supplier, and the Chairman of the Board of Selectmen or the Chairman of the City Council and the Mayor or the chief official of the water company or district as appropriate. The termination of a state of water supply emergency and order will be sent to the public water supplier by certified mail, return receipt requested, or by hand. The public water supplier may be informed of the termination by telephone prior to delivery.
Extensions to A State Of Water Supply Emergency Beyond The Six-Month Period

No state of water supply emergency will remain in effect for more than six months in the aggregate in any 12-month period unless the Department determines that the demand for water continues to exceed available supply by 10% or that a longer state of water supply emergency is required to protect the public health, safety, and welfare in all or in part of the area served by the public water system, and that the public water supplier has demonstrated the following to the department.

1. The problem which caused the state of water supply emergency has not been corrected. (The DEP Regional Office should consider changing the type of water supply emergency to an interim or a long term water emergency should it be determined that the problem will take longer to remedy or is not reparable).

2. Records indicate that existing and future demand cannot be met with existing water supplies.

3. For interim or long term water supply emergencies, the new source has not been identified or if it has, it has not been put on line or it is still not adequate to meet existing demands.

An extension will be considered on DEP’s own initiative or at the request of the public water supplier.

Before considering whether to continue a state of water supply emergency the Department will require the public water supplier to submit an update to his plan to bring about an end to the state of water supply emergency.

In reviewing the need for an extension, DEP will take into consideration efforts taken by the public water supplier to reduce consumption, implement long term plans, and comply with any requirements or orders.

Procedure

If the Department determines that an extension to the state of water supply emergency is required, or if the public water supplier requests an extension of the state of water supply emergency, the public water supplier should submit to the DEP Regional Office an updated plan to bring about an end to the state of water supply emergency PRIOR to the end date of the state of water supply emergency in effect at that time. (If the public water supplier is requesting an extension then it should include a written request with the plan).

1. Generally, a meeting should be held between the public water supplier and the DEP Regional Office to discuss the request and the Department’s determination of necessity and the progress made toward abating the emergency by the public water supplier since the last declaration of a state of water supply emergency. Documentation of such progress should be provided by the petitioning public water supplier

2. Following the meeting or discussion with the water supplier, the DEP Regional office will make a recommendation to the Regional Director and the DEP Boston Office to continue, amend or to allow the declaration to expire.

3. If the Regional Director and the DEP Boston Office determine that a longer state of emergency is required to protect the public health the DEP Regional Office will amend the declaration of water supply emergency and the following notice procedures will be followed:

   a. The Regional Director, in consultation with the DEP Boston Office, will approve the water supply declaration of a state of water supply emergency and Order prior to issuance. A copy of the final declaration of a state of water supply emergency will be forwarded to the Boston Office for the files.

   b. The Regional Director will notify the Water Management Program, the Legislative Liaison, the Commissioner’s Office, the Public Affairs Office, the Massachusetts Civil Defense Agency, and the Department of Public Health at least 24 hours prior to issuance of the amended declaration of a state of water supply emergency.

   c. DEP’s Legislative Liaison will notify appropriate legislators, and PAO will prepare a press release if appropriate.
The DEP Regional Office will draft and send the amended declaration of a state of water supply emergency to the public water supplier, and the Chairman of the Board of Selectmen or the Chairman of the City council and the Mayor, or the chief official of the water company or district as appropriate. The declaration of a state of water supply emergency will be sent by certified mail, return receipt requested, or by hand. The DEP Regional Office may inform the public water supplier of its contents over the phone prior to delivery.

4. If the Regional Director and the Boston Office determine that no basis for continuing state of water supply emergency exists they will forward their decision to the DEP Regional Office. The notice procedure outlined above in 4b-4d (with a denial substituted for the amended declaration in 4d) shall be followed. The DEP Regional Office may require the public water supplier to provide regular reports of progress or problems.

Policy on Emergency Interconnections, Takings, Purchase And Sales Of Water

During a state of water emergency, declared under section 15, of the Department has approved a plan designed to bring about an expeditious end to the emergency, a water company, public agency or authority of the Commonwealth or its political subdivisions which is the operator or a public water system affected by the emergency may, for such periods of time as may be approved by the Department, not to exceed six months cumulatively in any twelve month period, take by eminent domain under chapter 79 the right to use any land for the time necessary to use such water, or purchase water from another public water system; provided, however, that during a state of emergency affecting the water system of the Massachusetts Water Resources Authority, such power of eminent domain may be exercised by the Division of Watershed Management of the Metropolitan District Commission. Any operator of a public water system may, for such periods of time and may be approved by the Department, sell to any water company, public agency or authority of the Commonwealth or its political subdivisions, which has been authorized to make purchases of water pursuant to this section, such volumes of water as may be available for sale from time to time.

No taking, purchase or sale shall be made pursuant to this section unless the Department issues an order pursuant to MGL 21G, section 17 authorizing the taking, purchase or sale.

Should the Department approve a taking, purchase or sale, authorization for that action will be given in writing.

The Department may permit the use of emergency connections. The Department will review emergency connection options with the petitioning public water supplier and the donor community (if applicable).

In cases where an emergency connection between two public water suppliers is necessary, the Department will issue an order to the donor public water supplier requiring that the distribution of a specified amount of water to the public water supplier found to be in a state of water supply emergency. The Department’s order will require the public supplier receiving water through an emergency connection to take all reasonable steps to reduce the demand for such water for the duration of the state of water supply emergency.

All parties must take steps to establish that the use of any emergency connection will not endanger or threaten to endanger the public health, safety or welfare of persons served by the donor community and that all conflicting or competing uses of the proposed emergency interconnection are considered and mitigated where possible.

In the Department’s review of emergency water supply options, the DEP regional staff will prioritize supply augmentation options as follows:

1. Connection to an existing public water supply system
   a. activation of an existing connection
   b. creation of a new connection

2. Activation of an abandoned or reserve public water supply.

3. Development of new water supply source in the area served by the public water supplier (permanent or temporary).
4. Development or discovery of a new water supply source in a nearby community in the same river basin. Many public water suppliers have entered into agreements to draw from water supply sources owned or operated by other communities during water supply emergencies. It is the Department’s policy to encourage public water suppliers to regularly review and update these agreements.

5. Development of an out of basin source.

Public Notice

During a state of water supply emergency, DEP will ensure that the people served by the public water system are notified of the emergency and kept informed of its status. In addition, the Department, through the Boston office, will maintain and update a monthly tracking list of public water systems operating under a state of water supply emergency and make the information available to Legislators, appropriate state agencies, and the Massachusetts Civil Defense Agency. The public water supplier will notify persons served by the public water system of the state of water supply emergency either through newspaper announcements, bill stuffers, or electronic media and forward copies of any water supply declaration of a water supply emergency to the City Council, the Board of Selectmen, or chief official of the water company, or district, etc. and provide monthly updated information regarding the state of water supply emergency to the public for as long as the state of water supply emergency exists.

Limitations On Connections To A Water System

It is the policy of the Department to restrict new connections to a water system only in extreme circumstances when it is determined that other measures will not adequately address public health and safety. In each case, the Department will carefully evaluate the facts to ensure that limiting connections to a water system is justified and a necessary means to protect the public health and safety. The public water suppliers will be ordered to take actions necessary to correct the system deficiencies. DEP will use water banks to respond to source-related or source and storage-related emergencies which will require several months to remediate from the time that new connections are actually halted. A water bank is a flexible method to control which can be shaped to address the situation in each public water supply. Credits to the bank are made for conversation, leak repair and new source development with limited withdrawals allowed under certain circumstances to accommodate hardship cases and limited growth.

The Department will use moratoriums on new connections to respond to emergencies resulting from pressure or storage problems. A moratorium is a prohibition on new connections to the water supply. The area impacted by the moratorium should be limited to that portion of the system where the problem exists or which could contribute to the problems experienced. The area is subject to the moratorium should be modified whenever information is available which demonstrates that new connections to portions of the distribution system will not exacerbate existing problems. For either a water bank or a moratorium, DEP will direct the public water supplier to determine the method used to restrict new connections and how allocation decisions are made. The Department will provide oversight and technical assistance but will not become involved in determining how hardship and growth decisions will be made. In cases where an emergency interconnection to another public water system is being used, the Department will not allow water from that system to be credited to a water bank.

For an initial sixty (60) days from the time DEP authorizes or orders a water bank to be in place, a moratorium will be instituted. During the first thirty (30) days of the moratorium the public water supplier will be directed to provide the Department with a plan detailing the implementation details of the water bank. The bank should be fully implemented by the end of the sixty (60) day moratorium. The Department may provide the public water supplier with examples from other communities.

As part of a petition for a declaration of a state water supply emergency, the public water supplier may request to allocate water by means of a water bank or to use a moratorium or the Department may independently require implementation of either a water bank or moratorium. In the first case, the public water supplier will characterize the emergency and provide the information required below. In the latter case, the Department may, depending on the circumstances of the case:

1. Issue an emergency declaration with a connection moratorium pending submittal of the additional information within thirty (30) days; or
2. Issue an emergency declaration and reserve the decision on the moratorium until after evaluation of the additional information to be submitted within thirty (30) days.

The public water supplier should include or the Department may request, a discussion of the nature of the emergency which shall include a characterization of the emergency as source dependent, storage dependent and/or distribution system dependent.

If the emergency is **SOURCE** dependent the water supplier shall:

1. Calculate the maximum day yield in million gallons per day of existing sources based on 24-hour pumping. The allowable withdrawal rate shall be determined by dividing the maximum day yield by the peaking factor (typically 2, unless pumping records demonstrate clearly that another multiplier is more appropriate). Actual consumption shall be compared to the allowable withdrawal rate for the preceding two years. An emergency in which there is a continuous exceedance of allowable withdrawals for a significant portion of the past two years, based upon the historical record and opinion of the DEP Regional Office, shall be eligible for consideration for a water bank after the information requested in b,c,d and e has been reviewed. A graph showing the maximum day yield, peak demand, and allowable withdrawal rate must be provided.

2. Provide information to support the projected increase or decrease in supply over the next three years.

3. Provide information to support the projected demand increase for the next 12 months based upon construction which is already underway or authorized.

4. Provide information to support the projected demand, with use restrictions in place, for the next three years.
   a. Assuming no water bank
   b. Assuming a water bank

5. Compare the anticipated supply and demand based upon the history of supply and demand for the past two years and the projections for the next three years.

If the emergency is **STORAGE** dependent, the water supplier should:

1. Calculate recommended storage for fire protection;

2. Define existing storage; and

3. Project both for the next three years and compare results.

If storage is significantly less than the recommended levels and new storage cannot be built for several months from the time new connections to the water system are restricted and the fire chief documents a concern regarding the ability to meet fire flow needs and there is also a source deficiency as described above, the Department may approve or impose a water bank. If there is no source component to the situation, then a moratorium may be authorized or imposed.

If the emergency is **DISTRIBUTION** system dependent, the water supplier should:

1. Define the severity, extent and location of the system problem, and document the recurrence over a period of time.

2. Define any risks posed by the problem-pressure, backflow/fire.

3. Define the deficiency in the distribution system known or suspected to be the cause of service problems.

4. Project a timetable for corrective action.

5. Project the extent and severity of the problem with and without water bank restrictions.

6. Define the area to be impacted by the water bank.

If upon review of the above information the Department finds that pressure in all or a portion of the system is deficient, the Department may authorize or impose a moratorium.
Upon reviewing a petition for a state of water supply emergency declaration (which may or may not include a request from the public water supplier to declare a water bank or moratorium) the Department may find that implementation of a water bank or moratorium is necessary to protect the public health and safety. The Department may issue an order to the public water supplier to maintain a water balance log to implement a water bank whenever it deems control of new water connections to be necessary under the circumstances described above.

The Department will establish a water bank or moratorium only in cases of long term water supply emergency when it determines that the public water supplier needs time to finance and construct additional facilities.

In the opinion of the Department a water bank or moratorium is warranted only when the projected supply and demand analysis indicates that there will be no relief from the causes of the water supply emergency for a substantial period from the time that new connections are actually restricted.

**Procedure For Department Approval Of Water Bank Or Moratorium**

1. The DEP Regional Office will review all the information submitted. Upon review of the information available the chief will make a recommendation to the Regional Director and the Division Director.

2. If the Regional Director and the Division Director determine that a water bank or moratorium is necessary they relay their decision to the DEP Regional Office, the DEP Regional Office will draft the water supply declaration of a state of water supply emergency and Order to include a water bank. Notice of determination of the status of a water bank or moratorium shall be provided in the manner prescribed in the approval or denial of an extension of a declaration of water supply emergency.

3. The duration and terms of any water bank or moratorium shall be determined by the Regional Director and Division Director at the recommendation of the DEP Regional Office.

**Orders and Conditions Of A Water Supply Declaration Of A State Of Water Supply Emergency And Order**

Under MGL 21G section 17, the Department is authorized to issue orders, applicable within or outside the area in which the water emergency exists during a state of water supply emergency. The Department will issue all declarations of a state of water supply emergency in the form of an order. Orders may require the public water supplier to take specific action outlined in this plan to bring an end to the state of water supply emergency or other actions deemed necessary and appropriate by the Department.

The Department may also issue orders requiring public water supplier to:

1. Establish priorities for the distribution of any water or quantity of water use and to implement any priority scheme established. Any such scheme may include establishing a priority system for issuing and denying building permits, based on the priority given to existing services.

2. Permit any public water supplier to reduce or increase by a specified amount or to cease the distribution of the water, or to distribute a specified amount of water to certain users as specified by the Department, or to share any water with other water supply systems. This includes orders to take land by eminent domain, or to buy water from another public water supplier, or to require a public water supplier to sell water.

3. Direct any public water supplier to reduce, by specified volume, the withdrawal or use of any water, or to cease the withdrawal or use of any water.

4. Require the implementation of specific water conservation measures whether or not mentioned in the plan. Water conservation measures may include but are not limited to:
   
   a. Within 30 days of the date of issue of the water supply declaration of a state of water supply emergency and Order, a completed plan to bring about an end to the state of water supply emergency.

   b. Bans and restrictions on the use of water
c. A water audit (includes metering of service connections)

d. Leak detection and repair activities and programs

e. Public education activities and programs

f. Retrofit programs for public and private buildings

g. Measures for protecting existing water supplies

h. Other drought/emergency related measures designed to conserve water

5. Mandate the denial for the duration of the state of water supply emergency, of all applications for withdrawal permits within the areas of the Commonwealth to which the state of water supply emergency applies.

In addition, the Department may issue orders requiring the water suppliers to undertake any actions not specifically mentioned above, which in the opinion of the Department, are necessary to ensure delivery of fit and pure water.

Adopted: 2-13-97
Effective: 2-13-07
Date: 2-13-97

Arleen O’Donnell, Assistant Commissioner
Bureau of Resource Protection
ATTACHMENT A
TO
DWS POLICY 87-5
COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Town or District
WS ID #

Declaration of A State of
Water Emergency and Order

I. Parties

1. (Public Water Supplier) is a Massachusetts corporation established by Chapter _____ of the acts of ______________, for the purpose of supplying the inhabitants of ______________ with water. ____________________ is a public water supplier having its principal place of business at _______________________, Massachusetts.

   or

2. (City or Town) is a duly constituted municipal corporation in the Commonwealth of Massachusetts. (City or Town) owns and operates a public water supply for the provision of ________________________________, Massachusetts.

   or

3. (District) is a district established by ______________________ of Chapter ______________ of the Acts of ______________ for the purpose of providing water to its inhabitants. Its principal place of business is at ______________________, Massachusetts.

4. The Department of Environmental Protection ("The Department") is an agency of the Commonwealth having a principal place of business at One Winter Street, Boston, Massachusetts. The Department has authority to issue this declaration and order pursuant to MGL c. 21G, sec 15 and 17. The Department maintains a regional office at ___________ Street, ______________________, Massachusetts.
II. FACTS:

1. On ______________, 20__, Petitioned the Department for a declaration of a state of water emergency alleging:
   a. ________________
   b. ________________
   c. ________________

2. (Other facts in support of the Department’s finding). State with precision any facts relevant to the determination that follows:

III. DETERMINATION

For reasons stated above, the Department hereby determines that a state of water supply emergency exists or impends within the area served by ____________ in the Town of __________________, which currently endangers the public health, safety or welfare of the person currently served and issues the following Order:

1. ______________________ shall —

   (In addition to requirements deemed necessary by the Department to address the particular emergency-if no plan has been submitted-such plan must be included as a requirement. If the supplier is to take or purchase water or land for temporary supply for approval by the Department, authorization for that action must be included as well.)

2. Include dates or number of days from date of issuance.

If __________________________ fails to comply with the provisions of this Order, MGL c. 21G, sec 14 requires the Department to assess a civil administrative penalty as provided in section sixteen of chapter twenty-one A, on the supplier. Each day of continued violation shall constitute a separate offense.

   Issued on ______________________
   By the Department of Environmental Protection

____________________________________
Regional Director

cc:  Board of Health, __________________________
     Board of Selectmen, __________________________
     Executive Secretary, __________________________
     Division of Watershed Management, Water Management program, Boston
     Public Affairs Office
     Office of the Commissioner
     Office of the General Counsel, DEP, Boston
     Legislative Liaison, DEP, Boston
     Massachusetts Department of Public Health
     Massachusetts Civil Defense Agency
     Municipal Offices (as appropriate)
Appendix G
Emergency Water Supply Withdrawals

Policy #: OP.05

**Effective Date:** August 26, 1986

**Last Revised:** 11/13/02

**Contact:** Planning Department, Operations; or Executive Office

**Former Policy #:** P.II.L.1

**Reviewed by Chief Operating Officer:** Michael J. Hornbrook

**Date:** 11/25/02

**Reviewed by Internal Audit:** John A. Mahoney

**Date:** 12/4/02

**Approved by Executive Director:** Frederick A. Laskey

**Date:** 12/5/02

**Purpose**

This policy explains the criteria and process the MWRA will use to evaluate a request from a non-MWRA water system community for emergency withdrawals of water. This Document replaces the policy entitled "Emergency Water Supply Withdrawals" effective on March 5, 1997.

**Eligibility**

This policy applies to communities outside MWRA's water service area that are seeking water service on an emergency basis.

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To approve an emergency withdrawal of MWRA water from a non-MWRA water system community, MWRA must find that:

- The DEP has declared that an emergency exists. MWRA will only provide the minimum amount of water necessary based on findings that the community requesting the emergency connection has:
  - Utilized and will utilize all feasible non-MWRA sources of supply for the duration of the emergency;
  - Taken and will take all feasible steps to both minimize its demand on the MWRA system and the duration of the emergency.

- Supply of emergency water to communities or users not listed in Section 8 (d) of the MWRA Enabling Act will strive for no negative impact on the interests of current communities, water quality, hydraulic performance of the MWRA water system, or the environment, or the interests of the watershed communities; shall attempt to achieve economic benefit for existing user communities; and shall preserve the rights of existing member communities. Any evaluation of the impacts of emergency withdrawals shall clearly evaluate all changes to system reliability.

- Long-term plans to remedy supply deficiencies have been developed. This may include improved water conservation, new local or regional supplies of water, or application for admission to the MWRA water system for legitimate water needs beyond feasible local sources.

- The applicant community does not use MWRA water supply as a chronic emergency back-up supply without equitable contribution for the fair asset value of the MWRA waterworks system.
Emergency Water Supply Withdrawals (OP.05), continued

Applications for emergency water supply withdrawals should be submitted to the Executive Director of the MWRA and the Chief Operating Officer. The following process will be used by MWRA to evaluate requests from communities outside the MWRA waterworks system for emergency water supply withdrawals exceeding thirty days. For emergency water supply withdrawals of water for periods less than thirty days, refer to the "Short Term Approvals" section of this policy.

A. Application

An applicant shall submit a completed application to the MWRA Executive Director. MWRA staff will review and evaluate the application to determine the impacts of the emergency water connection on the MWRA water supply system. Applications for emergency water supply withdrawals will be considered for the duration of the emergency only, upon satisfactory completion of the requirements listed below.

B. Requirements

- The Department of Environmental Protection ("DEP") must declare that a water supply emergency exists and authorize the purchase of such water from MWRA. Copies of the emergency declaration and any orders issued by DEP to the community under M.G.L. c 21 G and any correspondence relative thereto must be submitted with the application.

- The community must provide evidence that a supply shortfall or disruption exists, provide reasons for the supply request, and document the amount of emergency supply requested, including, as appropriate:
  
  a. Safe yield, DEP registration and permitted withdrawals under the Water Management Act of available supplies. Average and maximum daily consumption for past three years on a monthly basis.
  
  b. Storage levels in reservoir or tanks (by elevation and volume).
  
  c. Estimate of days of supply remaining assuming drought, average and wet year runoff.
  
  d. Safe yield of supplies lost to contamination (if applicable).

Continued on next page
Emergency Water Supply Withdrawals (OP.05), continued

Application Process, continued

- Minimum allowable reservoir elevations (i) to keep intake flowing, (ii) for water quality, and (iii) for environmental requirements.

- Minimum ground water levels for well supplies.

- Other explanations of need for amount requested.

- The community must estimate the duration of the emergency during which it will need MWRA water.
  
  a). For drought situations, length of time needed to recharge supplies assuming average rainfall.

  b). For contamination: estimate of time for new sources or other corrective measures.

  c). For equipment failure: time to replace or repair.

- The community must provide an estimate of water use by class of users.

- The community must describe all feasible non-MWRA emergency supply investigations and present plans for implementing them or reasons for rejecting them.

- The community must submit its long-range plans for correcting supply deficiencies and must demonstrate that it has developed or has plans to develop or restore all economically and technically feasible local sources. The plans shall include a description of funding sources and an implementation schedule.

- For communities seeking a fifth emergency water supply withdrawal period, the community must submit a report with substantive detail delineating the community's long range plans and progress towards correcting supply deficiencies, plans to restore all economically and technically feasible local sources, and a detailed description of community based water conservation and accountability programs.

- The community must give sufficient data for hydraulic analysis by the MWRA including: local system operating pressures, pipe schematics of local system, and proposed location of emergency connection.

Continued on next page
The community must submit for approval a proposed inter-municipal agreement with a MWRA user community (the "transporting community") for payment of water, if the emergency water supply withdrawal is not directly from the MWRA system. This agreement shall provide for reasonable resale pricing by the transporting community, sufficient to recover costs including recovery of MWRA prevailing rate charges for water supplied on an emergency basis, use of the distribution system and legitimate local expenses only. The MWRA will directly charge the receiving community for premium charges and asset value contributions described in the "Charges" section of this policy. If the MWRA is unable to apply these charges directly to the receiving community, then the charges will be applied through the transporting community.

The community must submit a detailed description of water conservation and water accountability programs undertaken by the community or private entities including:

- Leak detection and repair
- Commercial and industrial water conservation
- Residential water conservation efforts
- Large meter downsizing
- Meter replacement
- Municipal facility conservation
- Unaccounted-for water analysis
- True-cost pricing and conservation-based pricing for water and sewer services
- Outdoor water restrictions
- Water supply protection measures

The community must provide evidence that it has complied, or is in the process of complying, with applicable MEPA requirements.
C. Review of Application

Upon receipt of the community's application for an emergency water supply withdrawal, the MWRA will:

- Review the applicant's document to help determine if the MWRA can make the findings listed in Emergency Withdrawal Approval Criteria.
- Prepare an analysis to determine the impact of the proposed emergency water supply withdrawal on the MWRA's water supply system status and its ability to supply existing users. The assessment will include the possibility of increased usage of MWRA supplies by partially supplied and non-MWRA communities due to drought conditions. Impacts to service to other community connections under various hydraulic conditions will also be evaluated.
- Upon the request of the applicant, and subsequent to the completion of application review by MWRA staff and following consultation with the Advisory Board submit a status report to the Board of Directors to inform it of the request, staff's review and the status of other pending permits and approvals.

If MWRA approves the request for an emergency water supply withdrawal, it will establish appropriate terms and conditions of service in the form of an Emergency Water Supply Agreement.

A. Conditions

MWRA's approval of an emergency water supply withdrawal, including any applicable conditions of such approval, shall be set forth in an agreement with the community that shall contain the following terms as appropriate:

- Firm limits on average and/or maximum daily use, or time of day use, of MWRA water. A requirement in Emergency Water Supply Agreements for the second and subsequent six-month periods is that any increase beyond the stated limits on water use will require a revision to the Water Supply Agreement and a recalculation of the asset value contribution payment (see the "Charges" section of this policy).
A requirement that the community assumes all costs of connection and installs a suitable meter.

A requirement that the community shall use all feasible non-MWRA sources for the duration of the emergency.

A requirement that the community shall submit a quarterly report on water usage, conservation program results, and status of emergency situation.

A requirement that the community shall institute and continue all practical conservation measures including, but not limited to, the following:

a) For initial agreements for withdrawal up to six months: a water conservation public education program, outdoor water ban with appropriate enforcement such as fines and shut-off for non-compliance.

b) For agreements for the second and subsequent six month periods: implementation of leak detection surveys and rehabilitation programs, 100% metering, a meter replacement program, pressure reductions where possible, implementation of true cost pricing and conservation-based pricing for water and sewer services, and a contingency plan describing how demand will be decreased if the local supply situation continues to deteriorate.

A requirement that the community meter all water transfers to its distribution system if it will receive MWRA water through another community system rather than directly from MWRA.

The right of MWRA to terminate approval under unforeseen circumstances such as inadequate supply, insufficient hydraulic capacity, and other such conditions relating to the safe supply of existing users and operational requirements of the waterworks system.

Other conditions as may be appropriate.
B. Approval Term

The MWRA may approve emergency water supply withdrawals for no more than six months at a time. Each Emergency Water Supply Agreement will be no longer than six months. Emergency withdrawals beyond six months will require a new application and Emergency Water Supply Agreement. The MWRA Advisory Board must also approve emergency withdrawals beyond six months, including any activations that occur beyond the first period. Advisory Board approval should be obtained prior to MWRA's approval. In considering withdrawals beyond six months, the MWRA will consider the applicant's efforts to reduce consumption, to implement its long-range plans and comply with DEP orders, and to implement water conservation program and water supply protection measures. The MWRA will also consider the impacts on MWRA's water supply system and its ability to supply existing users, and factors listed in the "Review of Application" section above.

Waivers

The MWRA may, in its discretion, waive any of the conditions or requirements set forth in this Policy and Procedure, not otherwise mandated by law or regulation, if it finds that the community has demonstrated unusual factors or extraordinary circumstances which would make imposition of the condition or requirement upon that community unfair or inappropriate and that the proposed action will not jeopardize the MWRA's ability to supply its water communities. Charges outlined in the section below will not be waived.

Charges

MWRA has adopted a rate structure for emergency water supply withdrawals that includes a premium charge added to the MWRA prevailing rate that shall apply to all emergency water connections, regardless of the nature of the emergency. Beginning with the first water withdrawal period after the effective date of this Policy, the premium charge shall be 10% of the MWRA's prevailing rate. Beginning with the second water withdrawal period, MWRA shall also assess an asset value contribution charge. Charges shall increase for additional periods of water withdrawal. Attachment A to this Policy presents a summary of charges for emergency water supply withdrawals.

Continued on next page
Emergency Water Supply Withdrawals (OP.05), continued

**Charges, continued**

For the purpose of this Emergency Water Supply Withdrawal Policy, a "period" is defined as one six-month Emergency Supply Agreement. Any six-month Emergency Water Supply Agreement between a community and the MWRA shall be counted as a "period". Rules governing premium charges and asset value contribution are only invoked when water is transferred from the MWRA to the Applicant community. The transfer of water from the MWRA to the applicant community serves as a trigger to initiate the corresponding premium charge and asset value contribution. Periods when there is no water withdrawal shall have no effect on the schedule of charges. Payment for emergency water supply withdrawals from the MWRA waterworks system shall be made by the user community on a monthly basis.

If an applicant has purchased MWRA water under an emergency supply agreement and has paid charges which include an asset value contribution and subsequently is approved admission to the water system on a permanent basis, the asset value contributions paid will be treated as credits against the total entrance fee. Payments of premium charges under an emergency supply agreement are not credited towards the entrance fee.

**Short-term Approvals**

The Executive Director or the Chief Operating Officer is authorized to approve the emergency use of MWRA water through an existing or temporary connection to the MWRA or a MWRA water system community by a non-MWRA water system or facility for a period not to exceed thirty (30) calendar days for any specific approval. A DEP declaration of water supply emergency in the requesting community is required for these emergency situations. Approval shall only be granted based on emergencies of non-chronic nature, such as supply and transmission disruptions. Such approval, if granted, shall be consistent with this Policy to the maximum extent feasible in the situation. The community must provide an initial written statement requesting emergency water supply, describe the situation, and present a plan for resolving it. The Board of Directors shall be notified of approvals granted under this paragraph. At the end of the temporary use, the community must provide a follow-up letter documenting how much water was purchased from MWRA or MWRA water system community, and how the situation was resolved.

*Continued on next page*
ATTACHMENT A

MWRA Charges for Emergency Water Withdrawals

Emergency Supply Agreement Period One:
• 110% of the MWRA prevailing rate

Emergency Supply Agreement Period Two:
• 110% of the MWRA prevailing rate plus,
• 110% of 1/3 of the annual payment associated with asset value contribution payment (entrance fee equivalent) amortized with interest over 15 years.

Emergency Supply Agreement Period Three:
• 110% of the MWRA prevailing rate plus,
• 110% of 2/3 of the annual payment associated with asset value contribution payment (entrance fee equivalent) amortized with interest over 15 years.

Emergency Supply Agreement Period Four:
• 110% of the MWRA prevailing rate plus,
• 110% of the annual payment associated with the asset value contribution payment (entrance fee equivalent) amortized with interest over 15 years

Emergency Supply Agreement Periods Five to Seven:
• 115% of the MWRA prevailing rate plus,
• 115% of the annual payment associated with the asset value contribution payment (entrance fee equivalent) amortized with interest over 15 years

Note: Premium charges shall increase by 5% for each subsequent three emergency supply agreement period beginning with period eight (e.g., the premium charges for period 8-10 premium charge would be 120%; the premium charges for periods 11-13 would be 125%, etc).

If an applicant has purchased MWRA water under an emergency supply agreement and has paid charges which include an asset value contribution and subsequently is approved admission to the water system on a permanent basis, the asset value contributions paid will be treated as credits against the total entrance fee. Payments of premium charges under an emergency supply agreement are not credited towards the entrance fee.