WLMAC MEETING NOTES OF March 1, 2011

Present: Greta, Eckhardt, John Cipar, Paul Malchodi (late arrival), Barry Rosen.

Note Takers: Paul Malchodi & Greta Eckhardt
Chairperson: Barry Rosen
Called to Order: Barry called the meeting to order on Tuesday, March 1, 2011 at 8:15 PM (ET).

Old Business:

1. Accept Minutes: John Cipar moved to accept the minutes of January 11, 2011 which was seconded by Barry Rosen. The vote to accept the minutes was 2 in favor, 1 abstention.

New Business:

2. Review of Commissioners' Meeting of January 24, 2011:

   2.1. Barry and Chuck reviewed some of the salient discussion items of this commissioners meeting with the WLMAC.

   2.2. The Commissioners were informed by the water district manager that the scheduled meeting with the Massachusetts Department of Environmental Protection had been postponed due to bad weather.

   2.3. The town of Boxborough and the Acton Water District had met. The results were that the town of Boxborough was no longer going to "push" their proposed special legislation.

   2.4. The district manager informed the Commissioners that the Assabet Sand and Gravel company was now working with a land consultant. This seem to be a stalling tactic.

3. Review of Commissioners' Meeting of February 28, 2011:

   3.1. The Christian Science Church is asking the District to modify its billing arrangement so that the church is billed only once a year. The purpose of this is to reduce the $15 billing service charge by $45 by using a single bill. The Commissioners have asked the finance committee to look into this option.

   3.2. The Flagg Hill water tank is currently off-line and is being inspected. Chris thinks that a substantial repair to the tank will be necessary based upon some preliminary photographs that have been taken of the inside of the tank. The Commissioners questioned whether or not at this point it might be a better idea to replace the water tank rather than institute expensive repairs. Chris commented that a new water tank, particularly one on stilts, would cost millions of dollars.

   3.3. The town of Acton, the town of Boxborough and the Acton Water District expect to sign a joint agreement on future cooperation on new public wells to be drilled in the town of Boxborough and for protection of zone 2 areas residing in Boxboro.

4. Capacity Outline Discussion:

4.1. In considering how the committee constructs our report, Paul suggested that it would be important for us to consider:

4.1.1. the amount of water pumped each day

4.1.2. the available storage

4.1.3. the "base" load of the system

4.1.4. the fire load of the system

4.2. During the discussion, other members of the WLMAC suggested that the report consider:

4.2.1. the possible results/effect of pumping the system at maximum stress for more than one day

4.2.2. Answering the question: How much water should we take out of the ground per year?

4.3. The attached rudimentary document is the WLMAC's work in progress and reflects the net output of the committee's discussions. It will be updated as it is changed/refined during each of our subsequent meetings.

Adjournment:

Due to the lateness of the hour, a motion to continue the meeting was made by Greta Eckhardt and seconded by Paul Malchodi. The motion was passed unanimously and the meeting stopped at 9:55 PM and will be continued beginning at 8:00 PM on Tuesday, March 08, 2011 at the AWD HQ.

WATER SUPPLY CAPACITY

A Report to the Acton Water District Commissioners

Water Land Management Advisory Committee

John Cipar
Margaretha Eckhardt
Paul Malchodi
Charles Olmstead
Barry Rosen

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EXECUTIVE SUMMARY

(Write this after rest of report has been assembled.)

INTRODUCTION

The water supply capacity of the Acton Water District is the result of a complex set of interrelationships between two systems within the District: Naturally occurring water resources and human-engineered infrastructure. An understanding of this capacity is critical to effective planning for District operations and improvements. Information on water supply capacity can also offer important input for planning by other municipal entities at town and regional levels.

In this report, water supply capacity of the District will be considered at four time scales, by looking at the amount of water available on a single day, over a short period of days, over a longer period of weeks or months, and on an annual basis.

Starting from an assessment of the District within its current limits coincident with the boundaries of the Town of Acton, we will also consider the effects of possible regionalization. Financial considerations will also be discussed.

COMPONENTS OF WATER SUPPLY CAPACITY

Key to both the natural and engineered systems are concepts of input, storage, flow and output.

Naturally Occurring Water Resource

Input

- Rain
- Melted snow
- Flow from neighboring districts

Storage

- Surface water
- Groundwater in unconsolidated soil and sediments
- Groundwater in bedrock fractures

Flow Paths

- Subsurface groundwater flow
- Surface runoff
- Streams and rivers

Loads

- Evaporation
- Evapotranspiration through plants
- Flow out of district.
- Withdrawal by humans via engineered infrastructure.

Human-Engineered Infrastructure

Input

- Groundwater
- Surface water
- Rain barrels

Storage

- Reservoirs
- Storage tanks
- Residence within distribution system

Flow Paths

- Pumped distribution system
- Leaks

Loads

- Base level use by residences, institutions and commercial entities.
- Fire protection
- Seasonal demands for landscape maintenance
- Leakage and loss

WATER SUPPLY CAPACITY TIME SCALES

Daily Capacity

How much water can be withdrawn from system on a single day?

-

Effect on natural resource:

- No measureable direct impact:

Impact on infrastructure:

- Primary relationship to storage and flow capacity of system.

Regional considerations:

Financial considerations

Short-Term Capacity

How does continuous withdrawal for a period of days impact the water supply capacity of the system?

-

Effect on natural resource:

-

Impact on infrastructure:

-

Regional considerations:

Financial considerations

Quarterly Capacity

Under conditions of drought for 3 months during the summer, how much water can be withdrawn??

-

Effect on natural resource:

-

Impact on infrastructure:

-

Regional considerations:

Financial considerations

Annual Capacity

Over the period of a year, how much water can be withdrawn?

-

Effect on natural resource:

-

Impact on infrastructure:

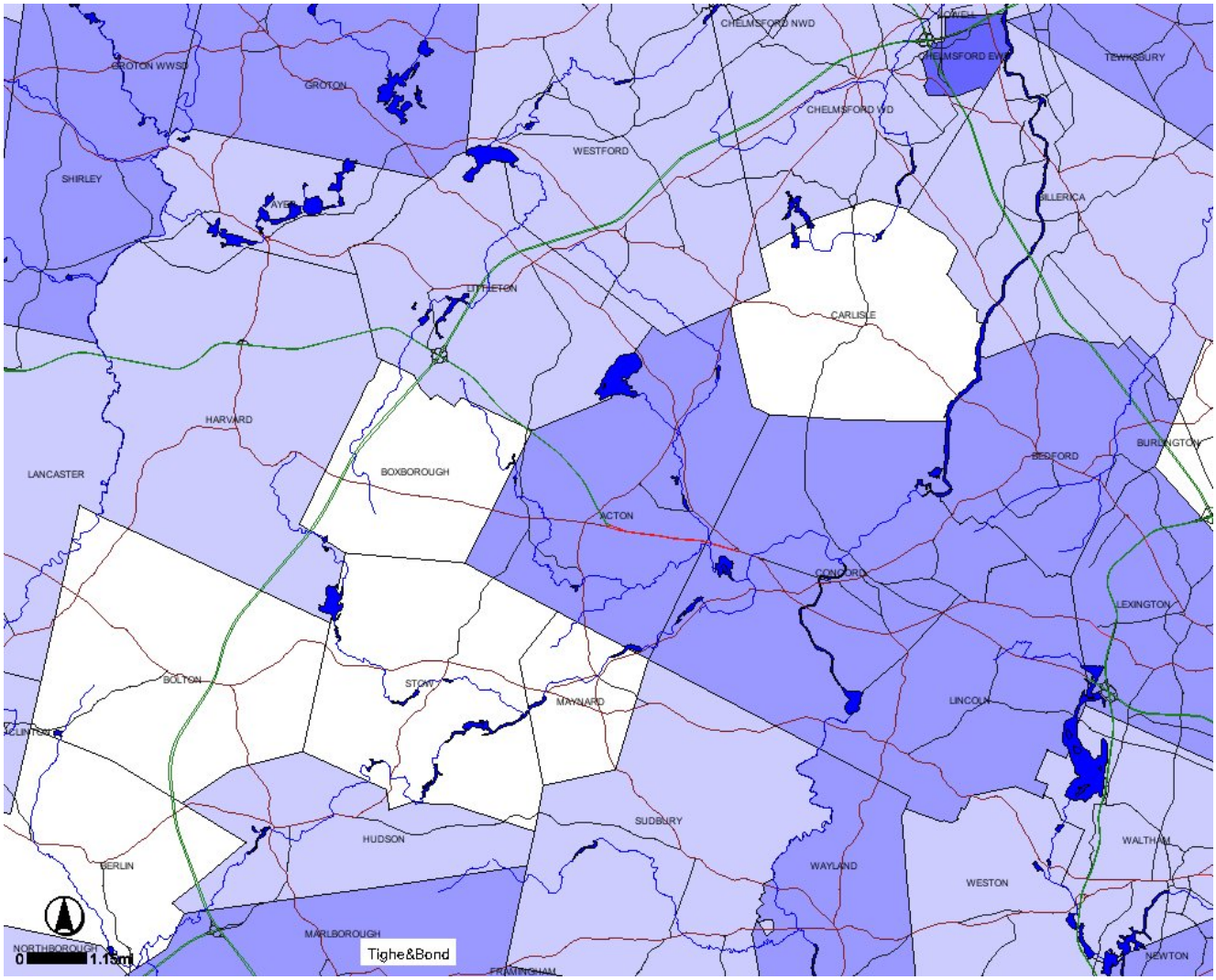
-

Regional considerations:

Financial considerations

RESOURCES

Map 1. Public water supplies near Acton



The map of the Commonwealth which follows provides a state-wide perspective of the number of towns that have public water supplies (or did not participate) and the relative water costs. The darker the shade, the greater the cost to supply an "average" amount of water to a residence in that town. Remember that a town in white either did not participate in the survey or does not have a public water supply. Acton (appearing as a town in medium blue color) appears as a district that is providing water to its consumers at a cost that is about average within the state.