

GISette

City of Marlborough
Massachusetts



A quarterly newsletter to keep people informed of updates and changes to the City's GIS and

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Welcome to the third edition of the *GISette*, a quarterly publication designed to keep people informed on what's happening with the city's GIS, data updates and ongoing developments. Although it is my primary consideration to convey information directly related to Marlborough's ever expanding GIS system, I will also attempt to include other items that highlight spatial resources and their impact on our everyday life.

GIS and Mapping Related News

In the last issue we noted that FEMA had issued new Flood Insurance maps. These maps became official on June 4, 2010. Since that time, inconsistencies in the new maps have become apparent and are causing problems for some homeowners. Those who may not have been required to purchase flood insurance in the past are now being told they must purchase it based on the new mapping. This may or may not be the case. However, the burden of proof in being put on the homeowner and at a considerable expense by their insurance companies. This issue has been widespread enough that FEMA has contracted with private consultants to review the new maps and begin the process of amending them where applicable.

To see the new maps in their current form you may click the following link:

[FEMA FIRM Maps 2010](#)

Perambulation

Marlborough continues to practice an ancient custom



Marlborough-Southborough Monument located on an island in the Sudbury Reservoir

You've probably seen them around. They stand a few feet tall and look oddly out of place in the middle of the woods or on the side of a road. Often covered in lichens and moss they stand like ancient sentries marking some bygone place. These stones are called monuments, and they mark the boundaries of cities and towns. There are 27 of these monuments that mark the limits of Marlborough. At each corner and at every angle in the perimeter of the City, you will find one.

According to the laws of the State of Massachusetts, every city and town is required to inspect their monuments every five years. They are to be inspected by designees of the city to ensure that they are intact. Once located and inspected, a letter noting the first initial of the city or town is to be painted on the appropriate side of the monument and the year recorded. Following the survey, the results are to be officially recorded by the City Clerk and a copy sent to all neighboring towns. Marlborough has been diligent in adhering to this legal requirement since its incorporation in 1660. But why do we do this?

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SPOTLIGHT

Middlesex District Attorney

By Assistant District Attorney Chris Tarrant

The Middlesex District Attorney's office utilizes GIS mapping in a variety of contexts to precisely measure and display the distance between places involved in criminal cases. A GIS map is often used as a visual aid for the judge and a jury in order to accurately display the measurement between or relative position of specific geographic locations for the jury at trial. GIS maps are also used in the investigative stages and as part of the pre-trial preparation process in numerous cases. One type of case in which GIS mapping is used frequently is in the prosecution of violations of Massachusetts General Laws chapter 94C, §32J – known as “school or park zone” cases. To prove a violation of this statute, the Middlesex District Attorney's Office often requests city and town engineers to perform GIS mapping to precisely measure the distance from the point of a suspected narcotics offense to the nearest school or playground and create a map to scale that reflects that finding. After the relevant distance is determined and a map created, the Commonwealth will provide this measurement information, the methodology employed to determine the measurement, and a copy of the map produced to the defendant. If the defendant requests a trial on the issue, the engineer or GIS Coordinator who determined the measurement and created the map is often called to testify at trial about his or her training and experience relative to GIS mapping, the accuracy and reliability of GIS mapping, and his or her conclusions in that particular case. The GIS map is then introduced as an exhibit to show the points of interest and distance between them to the judge and jury. In certain situations, a defendant will agree to stipulate to the introduction of the map and the relevant distance determinations as a result of the accuracy of the GIS system, thereby relieving the Commonwealth of the expense of calling live witnesses to prove this element at trial; in other situations, the factual strength of the Commonwealth's case -including the accuracy and visual presentation power of GIS mapping – may result in a guilty plea prior to trial. GIS mapping is particularly helpful where physically measuring the distance between two relevant points would otherwise be obstructed by natural or manmade barriers such as lakes and rivers or fences and highways.

Perambulation (cont.)

To begin to understand the tradition of perambulation, you have to remember that Marlborough, and nearly all of New England was settled by the British. As a result, many of our place names and traditions can be directly linked to places and customs in Great Britain. The city itself is named in honor of Marlborough in Wiltshire, England. Subsequently, those writing the laws of the commonwealth incorporated many laws and traditions as they existed in England.

Perambulation, also known as ‘Beating the Bounds’, has existed in England since at least the Roman occupation well over 2000 years ago. Like all ancient customs, it has become a hodgepodge of the various cultures it has touched along the way. One can find Anglo-Saxon, Viking and Roman customs within it. Although unclear, it is thought that it may stem from the Roman festival called *Terminalia*, honoring the god of landmarks. Festivals and feasts were held at the boundaries to honor the fertility of the land. As time went on, an evolution of the ceremonies took place. In simple terms it involved people in the locality perambulating their farms, manors, churches and civil boundaries, pausing as they pass certain trees, walls and hedges that denote the extent of the boundary to exclaim, pray and ritually ‘beat’ particular landmarks with sticks. This continued through time and as Christianity arrived in Britain, these pagan rituals were incorporated into their religious celebrations. The Christian event evolved into a procession with banners depicting the saints, chanting from the Scriptures and erecting of stone crosses at intersections with other parishes. Occasionally such processions would meet and disputes over precise boundaries might erupt.

In medieval times the ceremonial procession around the lands also served to reinforce the power and influence the land owner had over tenants and was an important means of asserting the primacy of the law in defining the rights of tenants. In a time when nearly all but a very few would have been illiterate, it was essential that no disputes arose over the ownership of land or rights over taxes paid to the land owner or church parish. Regular perambulation at least every five to ten years ensured each succeeding generation understood to whom they owed their allegiance.

Fast forward to the present day. We no longer have the festivals or strike the bounds with sticks. But we are adhering to the time honored tradition of inspecting our lands to ensure boundaries remain intact and known to local people. So as we walk the perimeter of Marlborough every five years, we are in fact continuing a modern interpretation of this truly ancient tradition.

Keeping a GIS Current

A never ending battle

Updating the existing data in the city's GIS is one of the most important aspects of my work. These updates make the GIS more accurate and effective and that is what people expect when they ask for information. It is also one of the most difficult I have. It is difficult in the sense that trying to stay on top of so much information and make myself aware of changes is far from easy. New plans are constantly coming in to our office and still more plans have to be sought out from various builders, contractors and developers. To give you an idea of what I'm talking about, let's talk about driveways. Driveways? That's right, driveways. Did you know that there are 9,346 driveways currently in Marlborough's GIS? I've added approximately 150 new driveways in the last couple of months alone. I've also added several hundred new buildings, parking lots and roadways. The list goes to include drainage pipes, sewer pipes, water lines, manholes, fire hydrants, various types of valves, and that is to name but a few. When you couple that with adding detailed information about each new entry, I think you can begin to understand the sheer magnitude of the task at hand.

Because this is such an important task, we had to change the way we request and receive information as a department. It used to be that we required finalized plans be submitted to our office only on Mylar sheets. Mylar is a durable polyester based paper that stands up to time. However, as we recognized the need to get updated information into the city's GIS, we have begun to also require that the same plans be submitted electronically in a format that can be imported directly into our system. This requires a fairly minor extra step on the builder or developers part, but it saves the city an enormous amount of time.

Originally, the layers of information you see in the GIS were developed through aerial photographs that were taken in April 2000. That process is expensive and a very large undertaking to say the least. With the city budget stretched thin already, updating these many layers by this method probably won't happen in the near future. Since then, any updates to those original layers have had to be made manually. It took some time, but we found what worked and what didn't. Staying on top of it can be another matter entirely. Updates could be a full-time job in themselves. Since the demand on GIS is constant, these updates often get pushed aside until some 'down time' can be found.

While we are trying our hardest to stay on top of things, please feel free to contact us if you there are updates that you need to see reflected in the system. We will make every attempt to get the information you need available to you.

QUESTIONS AND ANSWERS

Q: Can I make my own maps online yet?

A: We are within a month or two of unveiling our internet mapping system. We were on track until a problem arose with the software manufacturer that put us behind where we had hoped to be at this point. Rest assured, this tool is coming and you are going to love it!

Q: Can I still use the existing mapping site if I work for the City?

A: Yup. Click the link below and start making and printing your own maps. If you need help using the website, just ask.

[Click here](#) for the current web mapping site

Q: Will I be able to view maps and plans online in the future?

A: Yes. We are putting the finishing touches on a master plan book that will allow you to search and view every plan in our office online.



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