



Belmont Citizens Forum

Vol. 7, No. 5

A Newsletter for Belmont Residents

September 2006

Trapelo Road Work Continues Despite Delay

By Meg Muckenhoupt

As consultants complete a survey of Trapelo Road and Belmont Street's physical condition, the town is planning public hearings in September on plans to improve the corridor. Unfortunately, competition for federal highway funds may keep work on this busy regional road from beginning until 2011.

In September, the BSC group is expected to finish a field study of the Trapelo Road/ Belmont Street corridor for the town. This study will specify the exact physical conditions and measurements of the road – how wide the road and sidewalks are, the height of the curbs and so on - so that designers and planners have accurate information for the road's design.

When the study is finished, the Trapelo Road/ Belmont Street project will be almost done with what the Massachusetts Highway Department (MassHighway) calls the "25 Percent Design." This label means that specific environmental and design tasks have been finished – a quarter of the work to put together a new road. When a highway project reaches the 25 Percent Design phase, the towns involved submit a packet of information about the project to MassHighway for review, and MassHighway holds public hearings on the design.

The town plans to hold three public hearings this fall starting in September to resolve any lingering design issues before the town submits the 25 percent packet. That way, MassHighway's public hearings will find that Belmont solidl supports the design.

Road Planning Focuses on Hot Spots

According to Glenn Clancy, Belmont's Director of

Community Development, designers have been concentrating on a few trouble spots on the corridor. Clancy calls School Street "misaligned" as it crosses Belmont Street into Watertown. "We're going to be cooperating with Watertown... we need to come up with a solution to that intersection," Clancy said.

The intersection of Pleasant Street and Trapelo Road at Waverley Square is also getting plenty of attention. Over 30,000 cars a day pass through that intersection, Clancy said, but 15,000 of those cars immediately leave Trapelo Road and turn off onto Pleasant Street or Lexington Street. "We lose half of it [the traffic] before it gets into the corridor," said Clancy. Potential improvements to the intersection are limited by lack of space: the narrowest portion of the entire Trapelo/Belmont corridor's right-of-way is directly in front of the gas station at the corner of Pleasant Street and Trapelo Road.

Cushing Square is also under scrutiny because Belmont's Planning Board is considering changing the

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Environmental Events Calendar

By Michael Stratford

Middlesex Conservation District Fall Bulb and Perennial Sale. Friday, September 22, 3-6 pm and Saturday, September 23, 8 am-noon. Sale benefits Middlesex county conservation programs. Come to the 4H Fairgrounds, South Chelmsford Road, Westford. For more information, see www.middlesex-conservation.org, or call 978-692-9395.

Waltham Land Trust Shady's Pond Conservation Area Walk. Sunday, September 24, 1-3 pm. Explore Waltham's newest open space acquisition, land formerly owned by Our Lady's Parish on Trapelo Road. This area contains mature woods with a fern-covered floor, pine and oak covered ridges, a pond and cattail marsh, and a cascading stream that runs into Chester Brook Park. Meet at the Northeast School, 70 Putney Lane, Waltham. For more information, please call 781-899-2844. Please visit

www.walthamlandtrust.org to confirm starting time.

Brown Bag Lunch Series. Tuesday, October 10, 12:30-1:30 pm. Join the Charles River Watershed Association for a forum on Environmentally Sensitive Urban Development in the area north of the Zakim bridge. Bring your lunch to CRWA's office at 190 Park Road, Weston (located at the DCR Leo J. Martin Golf Course). Please RSVP to Rebecca Scibek at rscibek@crwa.org or 781-788-0007 ext. 200.

Building a Blue Allston III: Urban Low-Impact Development Workshop and Community Forum. Monday, October 16, 3-6 pm and 6-8 pm. Learn about the Charles River Watershed Association's work in North Allston as a part of its Blue Cities Initiative. The first session will focus on urban low-impact development. A second forum will discuss planning for water, green space, infrastructure redevelopment, and landscape design strategies in the area. Seating is limited, so please RSVP to Rebecca Scibek at 781-788-0007, ext. 2000. This free event will be held at the Honan Allston Library, 300 North Harvard Street, Allston. Co-sponsored by the CRWA and the Massachusetts Office of Coastal Zone Management.

Fall Walk at Arlington's Great Meadows. Sunday October 15, 1:30-4 pm. Join the Friends of Arlington's Great Meadows for a free fall walk around AGM. We'll follow the route in the "Guide to Arlington's Great Meadows" at <http://www.lexingtonma.org/clc/pdfFiles.htm>, and look for seasonal changes in the landscape. Bring field guides, binoculars and cameras. Meet in the parking lot behind the East Village Nursing Home, off of Bryant Street. Sponsored by Friends of Arlington's Great Meadows. For more information, contact Andrea Golden at 781-646-3941.

Implementing a Tree Management Program in Lexington. Wednesday, October 18, 7:30 pm. Listen to Lexington Superintendent of Public Grounds and Tree Warden David Pinsonneault discuss the town's 2001 Tree Bylaw. This free forum will focus on the challenge of maintaining a tree canopy in times of fiscal and environmental stress. Program will be held at the Cary Memorial Library, 1874 Massachusetts

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Belmont Citizens Forum Inc.
is a not-for-profit organization that strives to maintain the small-town atmosphere of Belmont, Massachusetts, by preserving its natural and historical resources, limiting traffic growth, and enhancing pedestrian safety. We do this by keeping residents informed about planning and zoning issues, by participating actively in public hearings, and by organizing forums on key subjects. Our newsletter is published six times a year (January, March, May, July, September, and November). Published material represents the views of the authors and not necessarily those of the Belmont Citizens Forum.

Letters to the editor may be sent to
P. O. Box 609, Belmont MA 02478
or to editor@belmontcitizensforum.org

Uplands Sewers Fail Health Test, Engineer Says

By Sue Bass and John Dieckmann

O'Neill Properties' plan for handling sewage from its proposed 299-unit housing development on the Belmont Uplands will not "adequately address issues of public health and environmental protection." This assessment comes from a review by Norfolk Ram Group, an independent engineering firm hired by the Belmont Citizens Forum. There is no evidence that new sewage flows will not cause additional hardship to Belmont residents "in lower-lying sewer areas," said Mark S. Bartlett, president of Norfolk Ram, in his report.

About 80 percent of all Belmont's sewage flows through the low-lying Winn Brook neighborhood en route to a Massachusetts Water Resources Authority (MWRA) connector on Flanders Road near Brighton Street. In heavy rainstorms, the sewer pipes running through Winn Brook often back up into yards and basements, a significant health hazard. Stormwater contaminated with sewage also runs into local brooks and ponds, polluting them and the Mystic River and Boston Harbor downstream.

In his report, Bartlett pointed out that the only calculation of sewer capacity for the project demonstrates that the existing sewer system does not have the capacity to accept additional flow. That calculation was done not by engineers for O'Neill, who provided none, but by the town's engineering consultants, Fay Spofford Thorndike (FST). Using data from the heavy rains in mid-May 2006, the FST calculation showed that the pipes are already overloaded or "surcharged" and thus are backing up. "The predicted hydraulic profile indicated severe surcharge of the system and illustrates that the

existing gravity sewer does not have capacity to accept the proposed project flow," Bartlett said in his report. The report has been provided to the Belmont Zoning Board of Appeals, which is considering an application from O'Neill for a permit for the housing under Massachusetts' anti-snob zoning law, Chapter 40B. The law requires 20 percent of the units to be affordable; in return, developers are allowed to build denser developments than local zoning allows.

Bartlett recommended that the ZBA require O'Neill to propose mitigation "that will improve the Belmont sewers' ability to transport the Acorn Park flow without adverse impact on existing customers and natural resources." He said O'Neill should fund the removal of substantial amounts of inflow and infiltration (I/I), the storm water and ground water that overburden the sewer system during storms. Inflow generally comes from roof drains or sump pumps that are improperly connected to the sanitary sewer system instead of the town's storm drains. Infiltration comes from groundwater seeping into cracked or broken sanitary sewer pipes. Infiltration is especially common in Winn Brook, where the groundwater is close to the surface. Much of the neighborhood was

historically part of the Great Swamp at Alewife.

Bartlett also recommended that the inflow/infiltration work be timed and targeted to guarantee that the proposed development cause no additional problems. He did not specify the amount of I/I mitigation that would be required but said it should be based on a detailed analysis of the flows. A computer model of Belmont's subsurface pipes now being developed by FST would be a useful tool if O'Neill funded the



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Sewers continued from page 3

additional work necessary to apply it to the specific situation of the Uplands development and the areas its sewage will affect, Bartlett said.

Bartlett emphasized that all I/I removal and other mitigation should occur before any sewage starts flowing through the pipes. In addition to this inflow/infiltration work, Bartlett proposed that O'Neill build sewage storage facilities to hold back waste water during surcharges – that is, during and after heavy storms. The sewage could be stored on-site at



the Uplands. In addition, O'Neill could work with the MWRA to build storage at critical areas near the MWRA connector on Flanders Road.

The ZBA has recently received another recommendation concerning I/I mitigation from Stephen H. Kaiser, a Cambridge resident with a Ph.D. from MIT. In a paper titled, "A Mathematical Model for Establishing the Mitigation Ratio for Sewer Overflow Conditions," Kaiser recommends that a minimum of 26 gallons of inflow or infiltration be removed for every gallon of additional daily flow added by a developer at Alewife. He said that 26-1 ratio would prevent an increase in pollution of nearby streams in a one-year storm. To prevent an increase in pollution in a two-year storm would require a 41-1 mitigation ratio, Kaiser calculates.

Mitigation ratios have increased in recent years, in part because of Kaiser, who has been spurring discussion since he began developing his mitigation models three years ago. Ratios of 4-1 and 5-1 had already become common before 2000, and FST noted in a letter to the ZBA in June that ratios as high as 10-1 have been required on recent projects. That is still not enough, according to Kaiser. "Developers in the entire watershed – not just Alewife – have been using ratios of less than one-sixth of what would be necessary to maintain water quality," Kaiser said

—*Sue Bass and John Dieckmann are directors of the Belmont Citizens Forum.*

Events continued from page 2

Avenue, Lexington. Sponsored by the Lexington Tree Committee. For more information, contact John Frey at 781-862-7954.

Explore the Western Greenway with Roger Wrubel. Saturday, October 21, 7:30-11 am. Embark on a 2.5 mile hike through the Western Greenway, exploring some of 1,000 acres of undeveloped, interconnected land in Belmont, Lexington and Waltham. Meet at Habitat, 10 Juniper Road, Belmont and end at the former Metropolitan State Hospital. Long pants are recommended for the gently rolling terrain. Bring water and a snack. Return transportation will be provided. The cost is \$15 for Massachusetts Audubon members (\$19 for non-members). Call 617-

489-5050 for more information and to register.

Waltham Land Trust Annual Meeting. Wednesday, October 25, 7:30-9 pm. Listen to a presentation by Paul Hellmund, co-author of *Designing Greenways* (2006) and co-editor of *Ecology of Greenways* (1993) at the Waltham Land Trust's annual meeting. After the business meeting concludes at 7:30, the event will be free and open to the public. Refreshments will be provided. For information, please call 781-899-2844.

Union of Concerned Scientists Report on Global Warming. Sunday, October 29, 7:30 pm. Kevin Knobloch, president of the Union of Concerned Scientists, will talk about the UCS report on Global

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Local Modern Homes are Historic, Adaptable

By David Fixler

There is growing interest in the architecture of mid-20th-century modernism. Certainly, this is partly due to nostalgia for an era of certainty and enthusiasm about the future, but there is also a longing for a return to a clean, simple, more environmentally friendly mode of living. With luck, interest in revitalizing modern houses will reverse the “tear-down” mentality, which views modern houses as expendable relics.

The modern architecture movement posited that the architectural styles of the past were no longer appropriate for life in the 20th century; instead, modern architecture was supposed to reflect modern life and the promise of the modern world. The first clients for Belmont's modern houses were academics and professionals who worked primarily in the new fields of information science and biotechnology. They believed that the technological and social promise of modernism should be expressed in their homes. Local modern architects and their patrons favored open floor plans with multiple uses possible in a single space, strong indoor-outdoor links, and the spare and elegant use of simple materials.

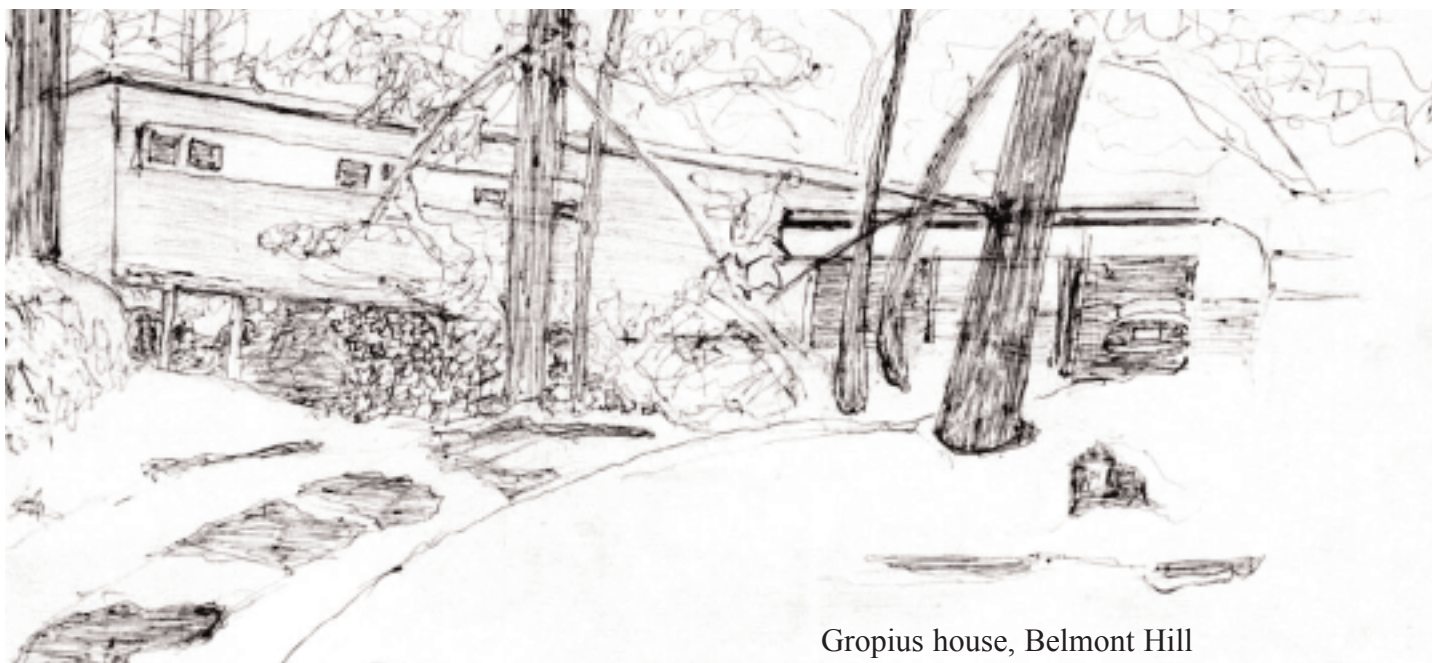
The seeds of architectural modernism around Belmont were planted early. Belmont is home to the first modern house in Massachusetts, designed by architect Eleanor Raymond for her sister in 1932. The town soon became famous as the locus of Snake Hill,

a seminal part of the international modern architecture movement.

In 1937, Carl Koch (pronounced “coke”), a young MIT graduate, and Edward Durrell Stone, the architect of the Museum of Modern Art in New York, were completing the first full International Style house in metropolitan Boston for Koch's parents in Cambridge. Carl Koch was interested in how modern materials and prefabrication could create comfortable homes at affordable prices. In 1940, seeking to create a cooperative community of modern houses, Koch formed a group that purchased a steep, rugged plot of land off Pleasant Street just west of Belmont Center and founded the Snake Hill development.

Snake Hill was the first of a series of modern house developments in the western suburbs including Six Moon Hill, Five Fields, and Peacock Farm in Lexington and Conantum, another Koch development in Concord. In 1941, *Progressive Architecture* magazine called Snake Hill “one of the best known and most significant groups of contemporary houses in the world.” Snake Hill and these other cooperative communities represent a successful combination of the American pastoral ideal of a home in nature and the sense of community that comes from having common amenities, such as play space, a pool, or a clubhouse. These communities were set up with neighborhood associations that encourage

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Gropius house, Belmont Hill

Modern Homes *continued from page 5*

socialization while ensuring that a community maintains its design integrity.

Snake Hill's houses are site-specific and generally have a relatively light touch on the grounds – their informality welcomes a more natural and less manicured setting. They are carefully oriented to capture sun in winter and shade and breezes in summer. The layout and materials of these houses are geared to simplicity, comfort, and efficiency. They are light and airy, with a feeling of spaciousness that comes with a close connection to nature through the use of large areas of glass and an open plan that does much to belie the fact that these are relatively small houses by today's standards. Their small size helps them retain a wonderful sense of intimacy.

Even the most luxurious understate their elegance. Luxury is achieved through quality in craftsmanship, the use of fine natural materials, and the careful choice of furnishings, rather than indulging in the soulless excess of size and “features” found in many of the large houses of the new suburban landscape.

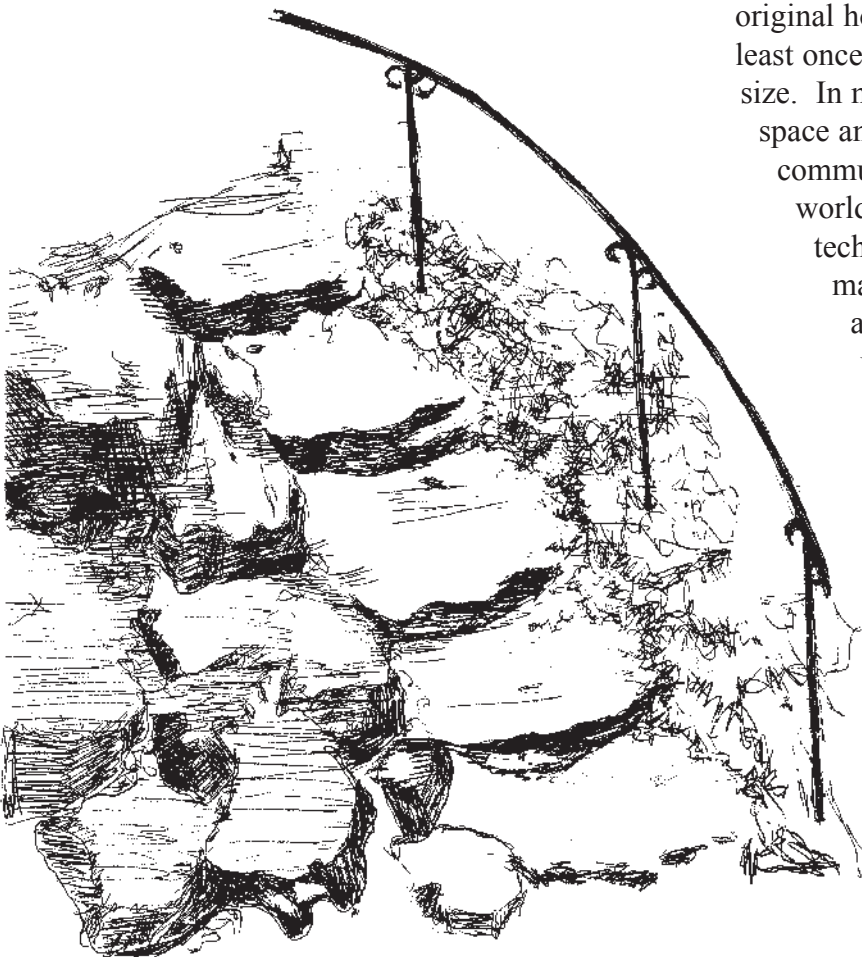
The natural feeling is reinforced inside the

house in the use of materials such as clear finished woods and rough stone floors with radiant heat. These were also some of the first houses to incorporate extensive built-in storage and ergonomically designed kitchens with integrated cabinets and appliances, and they were carefully planned to make maximum use of space.

The fluidity of modern houses renders these properties prime candidates for preservation and reuse. Then why have so many of these houses, perhaps up to 100 in the metropolitan Boston area alone, have been lost since the 1980s? There are a number of reasons, but they start with perception and are closely tied to land values. Most modern houses were designed for economy and efficiency. They are modest and comfortable but not luxurious. In communities like Belmont, property values have risen sharply in recent years, and people who buy expensive houses expect more opulence than the modern houses can deliver.

Recent interest in modernism coupled with a softening of the housing market should bode well for the modern house. The houses of Snake Hill were built to be flexible and expandable and have admirably lived up to this promise. Each of the original houses has been renovated and enlarged at least once, many of them substantially increased in size. In most cases, the character of the original space and the idea of the house – a house that communicates with both the modern industrial world and nature, a house that integrates technological advancements and natural materials – continue to glow through the alterations, and the houses remain as unmistakably modern today as they were at mid-century.

— *David Fixler is a Principal at Einhorn Yaffee Prescott Architecture and Engineering/PC in Boston. He is a co-founder and current president of DOCO-MOMO-US, the U.S. Branch of the international working party for Documentation and Conservation of buildings, sites and neighborhoods of the Modern Movement, and a Director of the Society of Architectural Historians. He lives in a Henry Hoover house in Weston.*



Events *continued from page 2*

Warming and its effects on New England.

This free talk is cosponsored by Sustainable Belmont and the

Lexington Global Warming Action

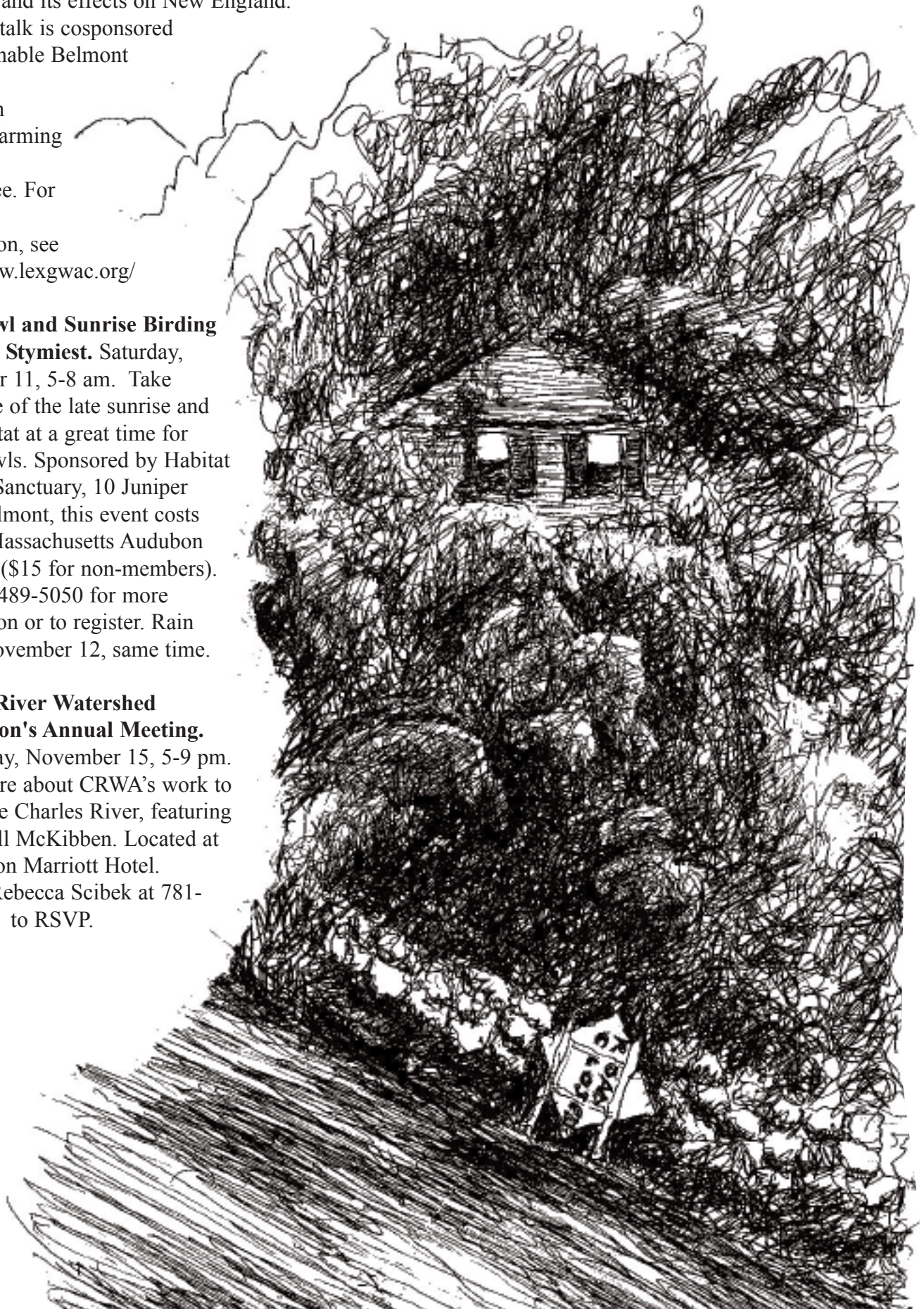
Committee. For more

information, see

<http://www.lexgwac.org/>

Owl Prowl and Sunrise Birding with Bob Stymiest. Saturday, November 11, 5-8 am. Take advantage of the late sunrise and join Habitat at a great time for calling owls. Sponsored by Habitat Wildlife Sanctuary, 10 Juniper Road, Belmont, this event costs \$12 for Massachusetts Audubon members (\$15 for non-members). Call 617-489-5050 for more information or to register. Rain date is November 12, same time.

Charles River Watershed Association's Annual Meeting. Wednesday, November 15, 5-9 pm. Learn more about CRWA's work to protect the Charles River, featuring author Bill McKibben. Located at the Newton Marriott Hotel. Contact Rebecca Scibek at 781-788-0007 to RSVP.



Belmont's Last Farm *By Jeff Bairstow; Photos by Ed Y*



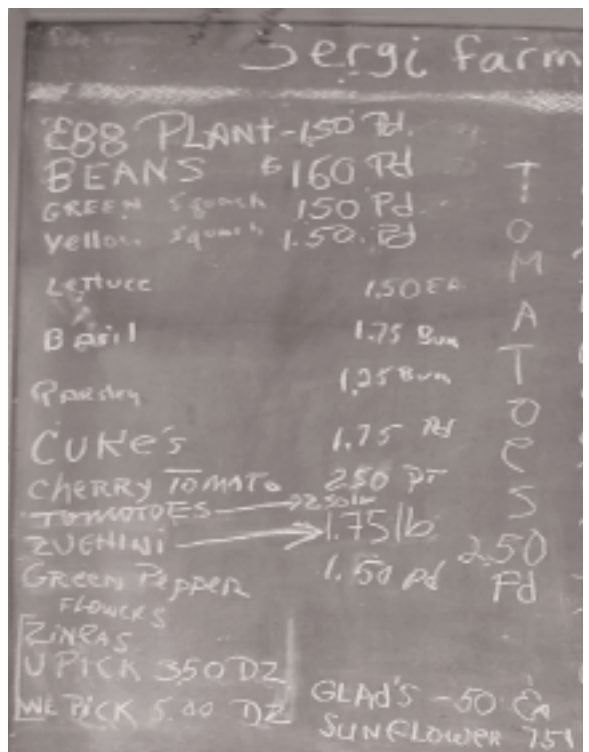
Just off Glenn Road...



... is Belmont's last farm



Peter Sergi



Harvest of the Day



Hidden away down Glenn Road, near Fresh Pond, sits Sergi Farms, the last remaining working farm in Belmont. Wandering down a dirt lane, the casual summer-time visitor is astonished to find a barn with an abundance of crisp, fresh vegetables for sale and fields of colorful flowers peeking from behind stands of sweet native corn.

Here sits Angelo Sergi, the 84-year-old patriarch of the farming Sergi clan, lord and master of all he surveys. His farming heritage extends back centuries through an immigrant grandfather from Sicily. But the Sergis have been farming here only since the end of World War II.

There has been a farm on this site since early colonial times. In 2002, owner Lydia Ogilby, a descendant of the Hill-Richardson family, filed an Agricultural Preservation Restriction on the land. (See “Last Working Farm in Town to be Preserved,” Belmont Citizens Forum Newsletter, March 2003, p. 1) That restriction ensures that these ten acres will be saved from developers and Belmont and its neighbors will be supplied with fresh produce.

— *Jeff Bairstow is a member of the Belmont Citizens Forum newsletter committee.*



Land

Belmont Begins Anti-Idling Campaign

By Jan Kruse

This past April, the town received a \$1,500 grant from the Massachusetts Department of Environmental Protection to develop an anti-idling campaign. Belmont's Department of Public Works worked with Sustainable Belmont to get the grant, which provides road signs, fact sheets, and decals to raise awareness about health and environmental problems associated with vehicle idling.

In May, members of Sustainable Belmont conducted observational studies of idling behavior around Belmont schools. There were many instances of caregivers idling their cars while watching a child get safely into the school or when picking up children at the end of the day. Another survey will be conducted next spring to see if there has been a change in this behavior.

After receiving the unanimous approval and endorsement from the Belmont Board of Selectmen on July 31, Belmont's Cleaning the Air Campaign was off and running. The Campaign, a Sustainable Belmont working group, is committed to reducing pollution from cars, buses and trucks in three ways;

- running an anti-idling campaign;
- reducing diesel pollution from school buses, other vehicles and hand-held engines such as leaf-blowers;
- encouraging walking to school and making Belmont more pedestrian friendly.

Several town departments are working to stop idling. Over the summer, Department of Public Works employees posted 30 road signs in areas identified as idling hot spots around town. These locations included all schools, parks, fields, and taxi stands at Waverley Square and Belmont Center.

Belmont School Superintendent Peter Holland is sending a letter to all parents and students about the importance of not idling around schools. He has also encouraged school bus drivers to turn off their engines when not moving, as bus exhaust is a major source of soot. Belmont police officers are issuing warnings to drivers about the state's five-minute maximum idling law. Belmont's Office of Community Development is making contractors aware of the law and the campaign has also received the support of the Belmont Health Department.

Belmont has also joined Greater Boston Breathes Better (GB3), a regional partnership of public, private and governmental entities that helps improve air quality in the greater Boston's area. GB3 promotes reducing air pollution from transportation and construction. To find out more about GB3, visit www.epa.gov/region1/eco/gb3.

Cleaner Technology and Bikes Can Help

Reducing unnecessary vehicle idling will help improve local air quality—but there's more that we can do. Belmont could encourage the use of cleaner-burning diesel technology in school buses and construction equipment and making Belmont more pedestrian-friendly. Next spring, Sustainable Belmont hopes to team up with other community groups to



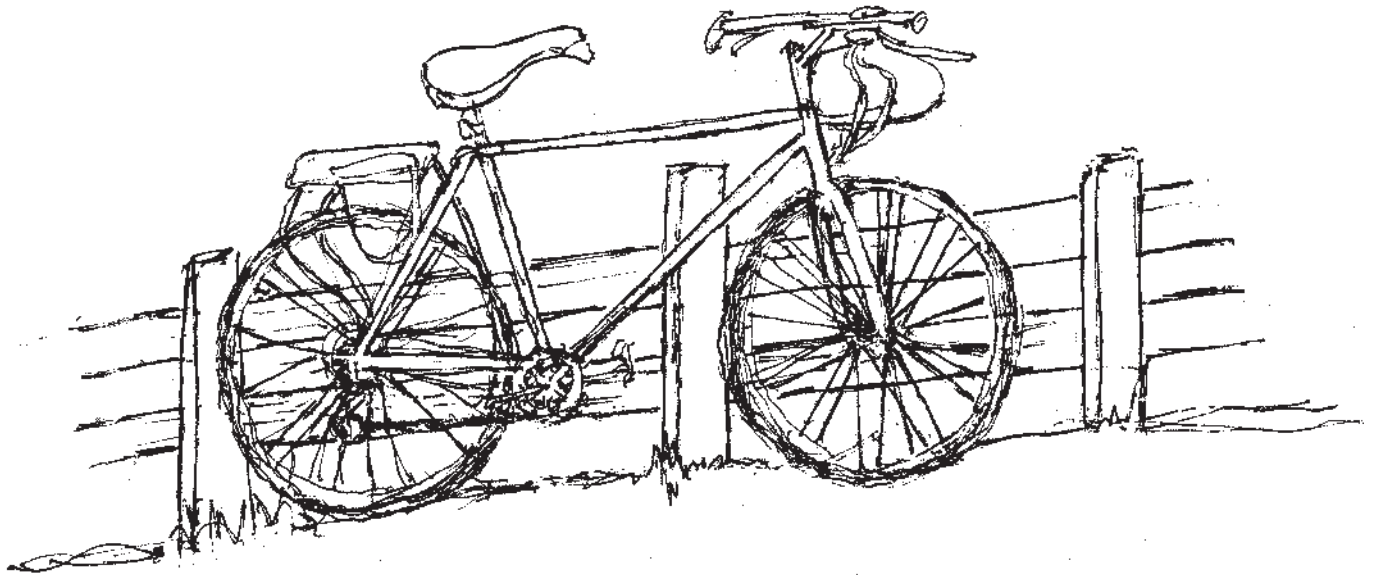
form a Safe Routes to School (SRS) program, which encourages caregivers to walk, rather than drive, their children to school.

If we want cleaner air, it will be up to each of us to do our part. Walk or ride a bike when possible. Carpool with others, combine errands in one trip. When you're not driving and are waiting in your car,

turn off your engine. It's really that simple.

If you would like to get involved with the Cleaning the Air Campaign, please send an e-mail to Sustainable Belmont, sustainablebelmont@gmail.com.

— Jan Kruse is Co-Chair of Sustainable Belmont.



Idling Quiz

1. True or false: During the winter, it's best to warm up a car's engine by letting it run for two or three minutes.
2. True or false: Every gallon of gas produces about 20 pounds of carbon dioxide when combusted.
3. True or false: If you're going to be parked for more than 10 seconds, it's better for your engine to turn it off.
4. True or false: Idling for a minute before turning off your engine can extend the life of your exhaust system.

1. F. Today's cars only need 30 seconds of idling on a cold day to allow oil to circulate through the engine. Drive slowly until the engine is warm.
2. T. Carbon dioxide is a greenhouse gas which contributes to global warming.
3. T. Get in the habit of turning off your engine, even if parked for just a few seconds.
4. F. Idling allows water to condense in your exhaust, causing corrosion, and could reduce the life of the exhaust system.

Answers

Letter to the Editor

Dear Belmont Citizens Forum,

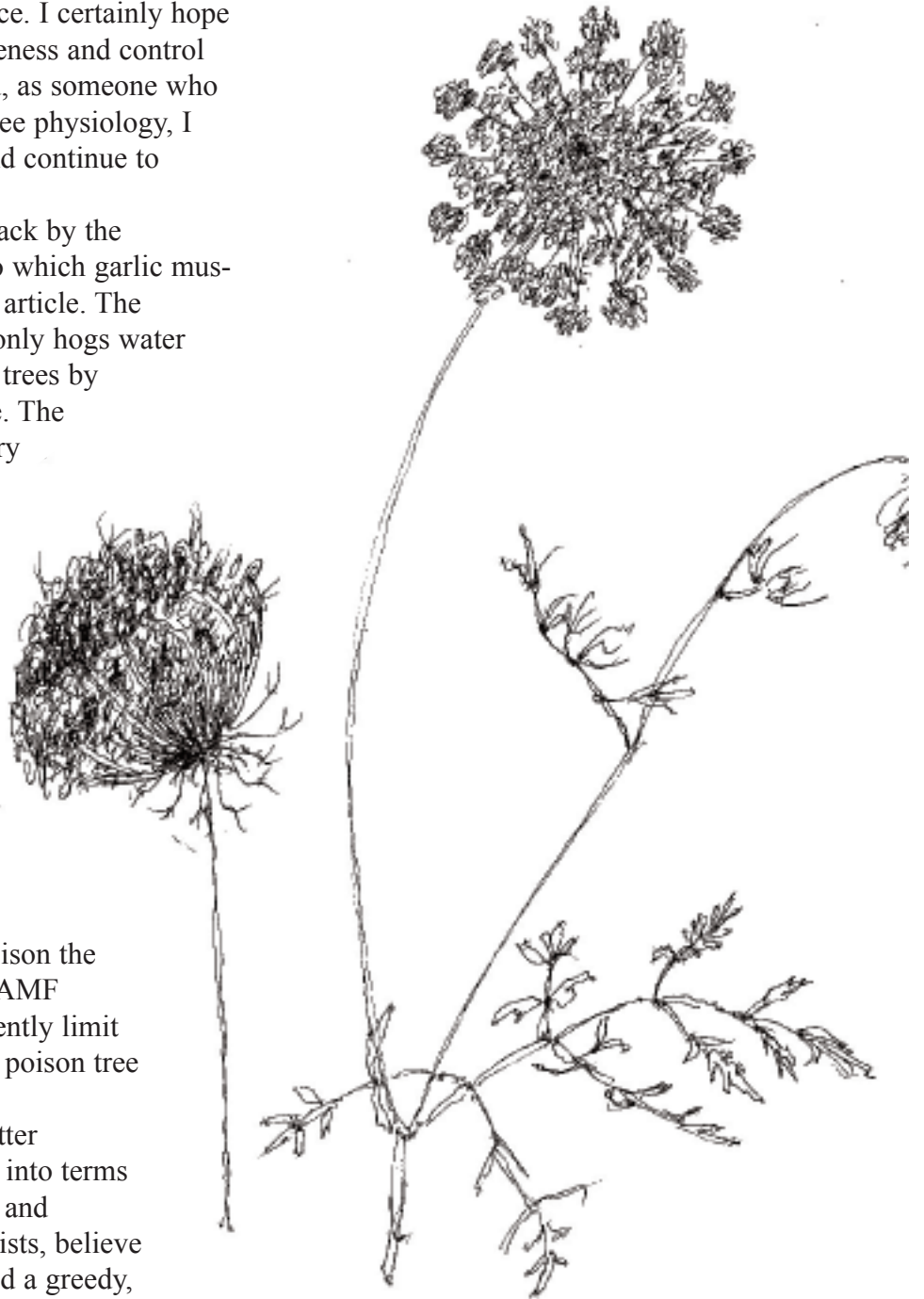
I'm writing to you about your July article "Garlic Mustard Poisons Tree Seedlings." As a current undergraduate Ecological and Evolutionary Biology concentrator at Brown University and summer research intern at the Harvard Forest, I was thrilled to read about Kristina's work in a forum where it will reach a wide, non-scientific audience. I certainly hope that the article helps promote awareness and control of the garlic mustard invasion. And, as someone who is spending the summer studying tree physiology, I hope that our trees are protected and continue to thrive!

That being said, I was taken aback by the oversimplification and the extent to which garlic mustard was anthropomorphized in the article. The sentence: "... this selfish plant not only hogs water and sunlight, but also stunts young trees by poisoning the soil" really got to me. The plant isn't selfish, but rather, it's very well-adapted to make maximal use of the available resources. It doesn't "hog" them--hogging implies that it's hoarding them away from other plants, rather than simply being able to extract them more efficiently. All of our plants--grass, trees, garlic mustard and wildflowers alike--are all doing the exactly the same thing. Garlic mustard just happens to be better at it than the other species. And it doesn't poison the soil. It's not malicious. It prevents AMF growth, which happens to consequently limit tree growth, but it certainly doesn't poison tree seedlings, as the title implies.

I understand that people can better understand a problem when it's put into terms that we understand, like "hogging" and "poisoning." And if you, as journalists, believe that describing a weed as you would a greedy, malicious person is the only effective way to

communicate the urgency of the problem, then I respect that. As a scientist, however, I was uncomfortable with the language that you used to communicate the extent of the problem.

Kaya Schmandt
76 Elm Street, Belmont



Trapelo Road *continued from page 1*

zoning (See “Cushing Square May Launch Business Rezoning,” Belmont Citizens Forum Newsletter, July 2006, p. 1). “We want to make sure the Planning Board’s plans work with whatever we’re doing with the roadway,” Clancy said.

Road Planning Must Balance Traffic, Business

The Trapelo/Belmont corridor could be an attractive destination, “a place where people want to come to to do their shopping, then stick around,” said Clancy. The challenge is to make room for both cars and people. Clancy noted that business owners generally want as much traffic volume as possible – but with too much traffic, the road becomes unfriendly to shoppers. “The more right-of-way we give to traffic the less space there is for pedestrians and sidewalks,” said Clancy.

Funding May Hinge on Waltham Development

Clancy estimates that the Belmont/Trapelo corridor project will cost \$8 million. To get the money to rebuild the road, Belmont has been seeking to get federal Transportation Improvement Program (TIP) funding. TIP funding is divided between all highway, bridge, and transit projects in a district. Belmont is in Massachusetts District 4, along with 81 other eastern Massachusetts municipalities. These other towns have projects costing anywhere from \$100,000 for initial planning to over \$20 million for major projects - all competing for \$421.4 million for 2006-2010, or about \$5 million a town.

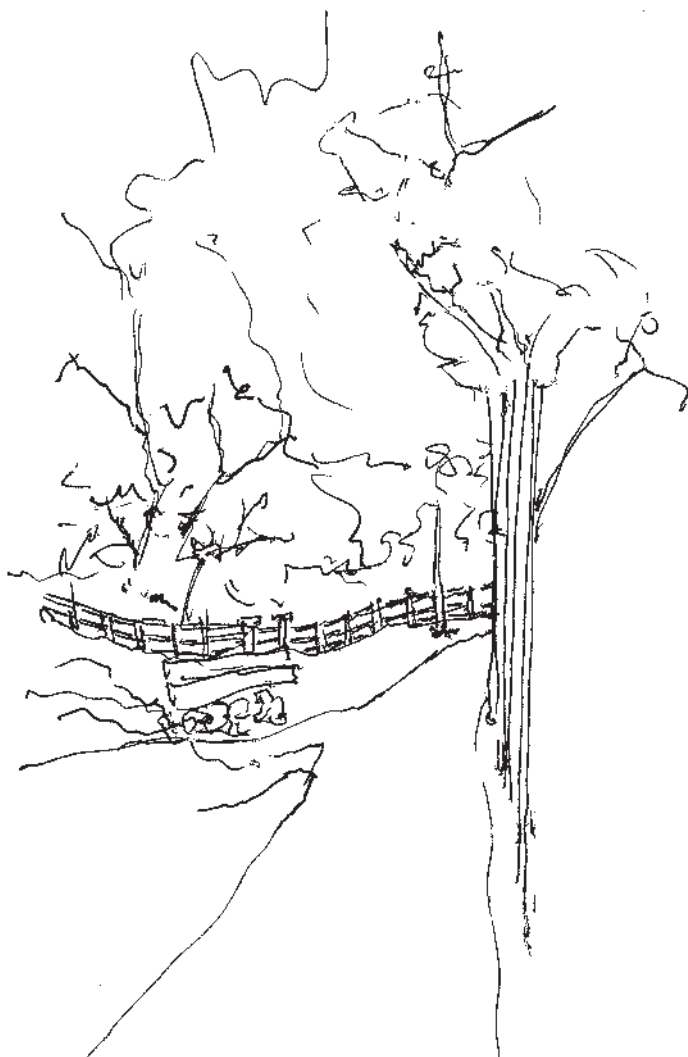
The Massachusetts Planning Organization met on August 24 to set priorities for TIP funds through 2010. Trapelo Road did not make it onto that list. However, there are two good reason why Belmont might still get funds before 2011.

Projects “fall off” the TIP frequently. Towns that applied for funds are often unprepared to proceed with their projects when the money comes available. New slots for towns to get onto the TIP open up quarterly. “As long as we keep working, we stand a chance,” said Clancy. “... I don’t want another Pleasant Street project, where it takes 10 years to go through the design process.”

MassHighway also requires municipalities planning roads to take into account projected traffic

growth over the next twenty years, Clancy said. The goal is to make traffic flow more smoothly, or at least not to make it any worse; the official term for this approach is to “maintain the level or service.” Several developments are planned on or near Trapelo Road just over the border in Waltham (See “Cities on Belmont’s Borders,” Belmont Citizens Forum Newsletter, March, 2004, p. 8). The more cars use Trapelo Road, the more important Trapelo/Belmont Corridor becomes to regional planning, and the higher priority it will have at future TIP meetings.

“I see such great possibilities,” said Clancy. “It could be a beautiful corridor.”



For updates on the public hearing schedule, see the town calendar at http://town.belmont.ma.us/Public_Documents/BelmontMA_Calendar

— Meg Muckenhoupt is Editor of the Belmont Citizens Forum Newsletter.

Sampling Little Pond
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the current conditions from prior tests.

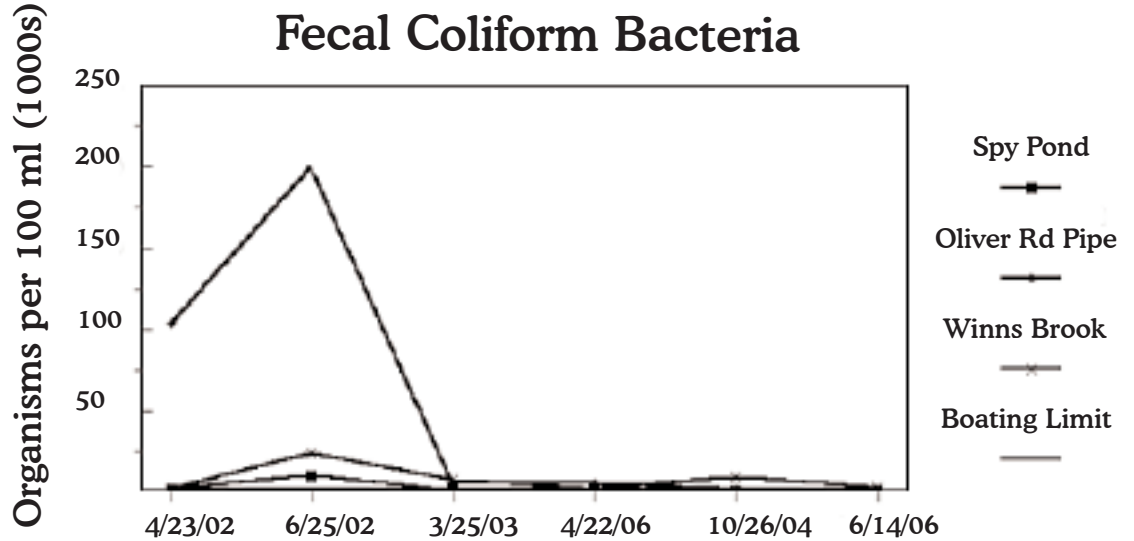
The chart at the top of page 14 shows E. Coli test results for three water sources that flow into Little Pond: Spy Pond, Winns Brook, and the Oliver Road outflow pipe. The graphs also shows the Massachusetts

standard for water for recreational boating, as there is public boat access to Little Pond from Brighton Street. It is easy to tell that water from the Oliver Road pipe on April 23, 2002 was filthy, but it is hard to see the variations in the E. coli results for the other water sources.

The chart at the bottom of page 14 shows the same data on a logarithmic scale – meaning that the vertical y-axis is systematically distorted so that each major tic increases by a power of ten. The smaller end of the vertical range is expanded and larger end is compressed, so that it is easier to see the differences at lower levels of E. coli. The second chart also shows the Massachusetts standard for swimming and for untreated water to enter a public water supply.

The quality of the water coming into Little Pond varies tremendously. There is a downward trend that probably represents progress as sanitary sewer

Fecal Coliform Bacteria



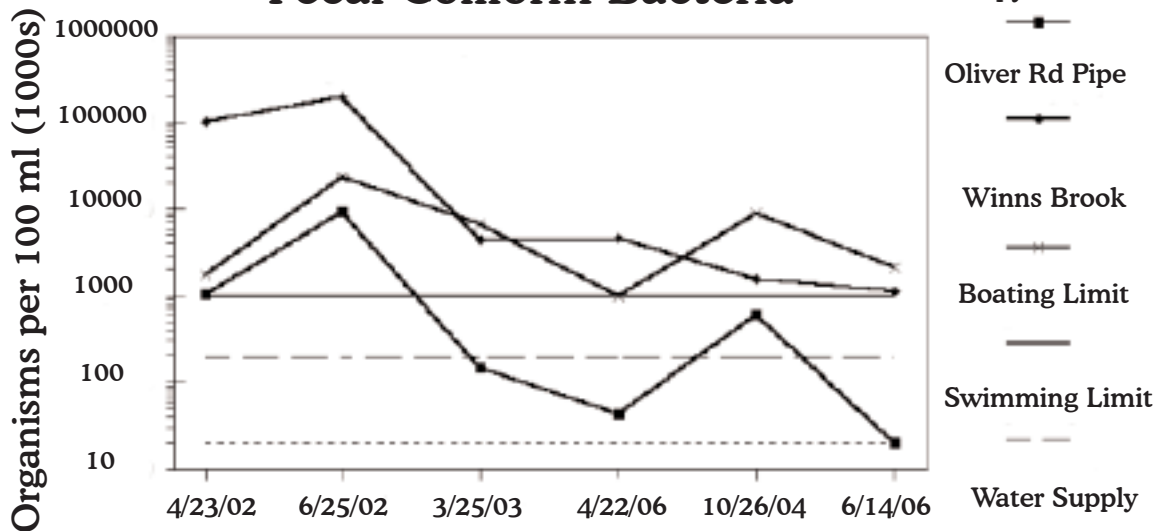
problems get fixed. But why were two of the samples taken in October of 2004 so much worse than in March, 2002? The short answer is "noise," the pesky problems that make measurements imperfect and varying. To understand the noise in these measurements, take a look at the next graph.

E. coli Affected by Rain, Temperature

Consider the chart on page 15. It shows two years of monthly water samples from Winns Brook where it flows into Little Pond, with data missing for March 2005, and January, 2004. The water quality varies from less than 200 bacteria per 100 ml to over 40,000 E. coli per 100 ml. There is a huge seasonal variation, partly because E. coli are adapted to human body temperature, and thrive in warm weather.

Part of the noise arises from a sampling and testing process that is not repeatable. Often two samples are taken from the same water within minutes of each other and sent through the same tests for quality control, to see if the two samples agree. If the two samples are in agreement within a factor of two, that

Fecal Coliform Bacteria



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is acceptable. Imagine if you weighed yourself and the scale said 100 pounds. A minute later, you got on the same scale and it said 200 pounds. This variation sounds huge, but it is minor compared with the variation by a factor of 200 shown on this graph.

Another source of variation is rainfall. Rain puts extra water into leaky sanitary sewers which causes sewage to leak out of the sewers and raise E. Coli levels in Little Pond.

However, rain also dilutes sewage that leaks into Little Pond which can lower E. Coli levels.

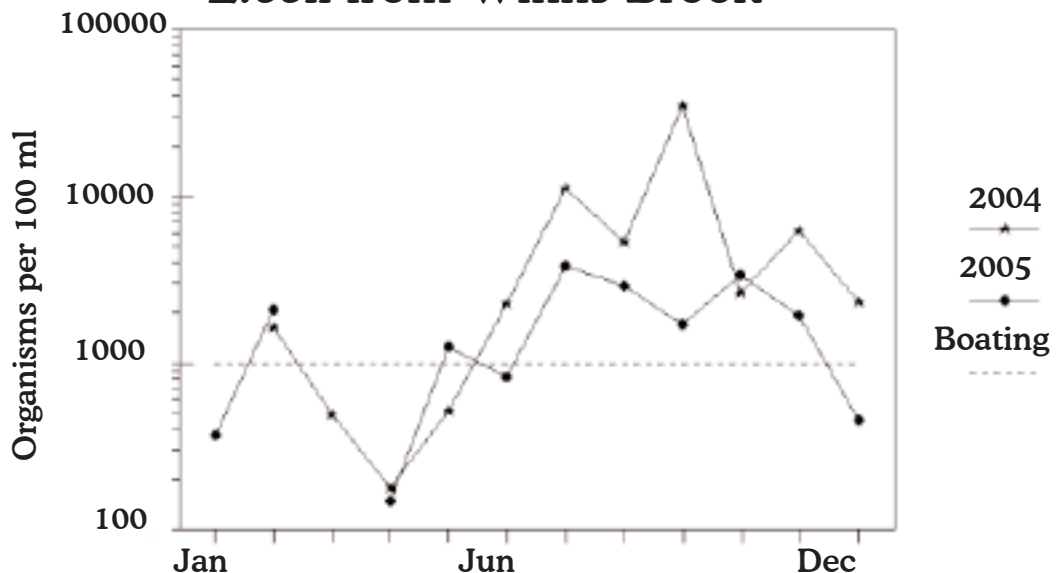
So, what does this water quality data mean? You should avoid swimming in Little Pond, and don't go boating when the weather is hot or rainy. It also means that Belmont's sanitary sewers are leaking water containing human feces into our waterways.

If you noticed water

dripping from an upstairs bathroom into your kitchen when a toilet was flushed, you would fix it. Belmont has a parallel problem. Our sewers leak into our streams. Now we are beginning to realize that we want to fix the leaks.

— Sumner Brown is a director of the Belmont Citizens Forum.

E.coli from Winns Brook



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People Are Asking

How Dirty is the Water in Little Pond?

By Sumner Brown

Little Pond is full of water; the question is, how much bacteria is in the water? The answer depends on where the water is sampled, the time of year, and how much error or “noise” there is in the measurement.

The Mystic River Watershed Association (MyWRA) regularly samples Belmont's Little Pond for E. coli. E. coli is part of a group of organisms known as fecal coliform bacteria which live in the intestines of warm-blooded mammals, including humans. Most E. coli are beneficial, and help humans absorb B vitamins from food, but some types of E.

coli can infect people and cause diarrhea and intestinal hemorrhages. E. coli are also associated with pathogens such as cholera and typhoid; where you find the bugs that cause cholera or typhoid, you'll find a lot of E. coli too. The more E. coli there are in the water, the more likely it is that someone who has contact with the water will get sick from E. coli or another associated pathogen – and the more likely it is that the water is contaminated with sewage. That is why MyWRA tests for E. coli.

MyWRA's E. coli tests give the number of E. coli and other fecal coliform bacteria that that a laboratory test finds in a 100 ml (about half a cup) of water. Alas, MyWRA does not have access to instantaneous water testing in Little Pond, so the best we can do is look at past results, and try to estimate

continued on page 14