



Belmont Citizens Forum

Vol. 9, No. 1

A Newsletter for Belmont Residents

January 2008

Belmont Can Act To Limit Traffic Growth

By Meg Muckenhoupt

“Our town is and will continue to be under traffic attack,” said Anne Paulsen at the November 15 panel “What Can We Do About Traffic?” sponsored by the Belmont Citizens Forum. Paulsen, Belmont’s former state representative, listed just a little of the new construction that will increase Belmont’s jams, snarls, and gridlocks over the next decade: McLean’s housing and offices will add 7,000 vehicle trips a day to Belmont roads; the Uplands development, 2,000 trips a day; the Cambridge “Quadrangle” off Concord Avenue and new denser building at the Fresh Pond Mall, 18,000 trips a day. Belmont must deal with both local and regional traffic problems. “To solve both issues, we need to change behavior patterns,” said Paulsen.

Parking Economics Change Traffic

Businesses contribute to traffic by encouraging employees to drive. “What’s your incentive at work? Free parking,” said Jim Gascoigne, executive director of the nonprofit Charles River Transportation Management Association. “If you bike or walk, you get nothing.” Parking spaces take up a lot of real estate: a typical 8-foot by 9-foot office cubicle is 72 square feet, while a 10-foot by 20-foot parking space is nearly three times as large. The federal tax code doesn’t help: employees can now spend \$215 a month in pre-tax dollars on parking spaces, but only \$115 a month on transportation. Towns generally require businesses to build off-street parking and make curb parking free or charge much less than the space is worth.

That land isn’t free; a 1995 study by Stanford University found that each parking space cost the university \$148 a month, equal to \$200 a month in 2007 dollars, said Jason Schrieber, a consultant with Nelson/Nygaard Associates and a former traffic planner for Cambridge. For a fraction of that subsidy, many employees are happy not to drive. Schrieber cited several studies showing that when large employers subsidized alternative transportation, parking demand declined by .2 percent for every dollar of monthly subsidy. For \$50 a month, 10 percent of employees would leave their cars at home; for the \$200 Stanford spends on parking, nearly 40 percent would walk, bike, carpool, or take public transit.

Conventional town planning separates daily activi-
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Environmental Events Calendar

Friends of Fresh Pond Reservation Annual Members' Meeting and Potluck Supper. Sunday, January 27, 6-8:30 p.m. Come one, come all, to the sixth annual winter meeting of Friends of Fresh Pond Reservation! This will be an opportunity to visit with other folks who love Fresh Pond and to learn about the activities of the Friends group. After the potluck supper, we will briefly review what we have accomplished this past year, then share ideas for future programs and projects in a relaxed roundtable discussion. The potluck will be held in the Maynard Ecology Center in the basement of Neville Place, 650 Concord Avenue, Cambridge. Newcomers are welcome. Please register; important information on parking will be given when you register. E-mail Elizabeth Wylde at friendsoffreshpond@yahoo.com or call (617) 349-4793 and leave your name and phone number.

Arlington Land Trust Annual Meeting. Monday, January 28, 7-9 p.m. Join the Arlington Land Trust

Annual Meeting to share news and concerns about open space in Arlington, and talk about the challenges and opportunities of the year ahead. Kevin Knobloch, president of the Union of Concerned Scientists and a former aide to U.S. senators and representatives, will be the guest speaker for the evening. Elections of new board members will occur after Mr. Knobloch's speech. Refreshments will be served. Meet at the Robbins Library, Arlington, in the Community Room. For more information, email info@arlington-landtrust.org.

Composting With Worms. Wednesday, January 30, 6-7:30 p.m. Are you an apartment dweller wishing you had backyard space for composting? Don't worry, you can compost indoors and start any time of the year! In this workshop, you will learn from Cambridge's Recycling Director, Randi Mail, how to use worms to turn your garbage into "black" gold. We will have a free raffle to give away a plastic container and worms for making your own indoor bin. Please register! E-mail Elizabeth Wylde at friendsoffreshpond@yahoo.com or call (617) 349-4793 and leave your name and phone number.

Waltham Land- and Water-Use Informational Session. Wednesday, January 30, 7-9 p.m. The Waltham Land Trust will sponsor a meeting with a number of local officials who are decision makers in land- and water-use changes. Featured participants are members of the Board of Survey and Planning, the Conservation Commission, and the Zoning Board of Appeals. The public is invited to listen and learn. The meeting will be in Waltham's Government Center Auditorium. For more information, contact Jennifer Rose, Interim Program Manager, at jenniferwlt@tiac.net.

Friends of Alewife Reservation Annual Meeting. Thursday, January 31, 6:30 p.m. This free meeting will feature speakers, presentations by FAR task forces, a slide show, and a retrospective of FAR events, projects, and future possibilities. Light refreshments will be served. Participants will find a rich diversity of Reservation interest groups and

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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

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ConCom Rejects Uplands Construction Plans

By Sue Bass

Belmont's Conservation Commission voted unanimously last month to deny O'Neill Properties permission to build a 299-unit mixed-income housing development on the Belmont Uplands at Alewife. The commission ruled that the project failed to comply with the regulations implementing the state Wetlands Protection Act, that it failed to comply with the stormwater policy of the Massachusetts Department of Environmental Protection (DEP), and that O'Neill had not provided all the information required by the ConCom. O'Neill's failure to pay \$13,000 in fees for the ConCom's consultant on the project, Horsley Witten Group, was cited as an additional reason for the denial.

Development of the Uplands property — which despite its name ranges from about 8 to 23 feet above sea level, the ConCom noted—has been debated since 1999, when O'Neill bought the land from the Arthur D. Little consulting firm. On two sides the 15.6-acre property borders the state's 120-acre Alewife Reservation; on a third it adjoins undevelopable marshland; on the fourth side it abuts Frontage Road, parallel to Route 2. Pro-development forces see profit and property taxes; land preservationists value the land both as wildlife habitat and as a sponge to soak up stormwater in a flood-prone area.

O'Neill Plans Appeal

Steve Corridan of O'Neill Properties said the developer would appeal and insisted that the project does meet wetlands standards. He claimed that the ConCom process has been hijacked by a group trying to color developers as evil and to pretend that the site

is pristine. "The site is far from pristine," Corridan said, having been a landfill during the construction of Route 2 and a pig farm before that.

Furthermore, Belmont badly needs the affordable housing the project would provide, with 2,300 households eligible for affordable units, he said. Corridan was referring to the number of Belmont households with incomes at or below 80 percent of the Greater Boston median income. Under the state law permitting O'Neill to override local zoning, 20 percent of the Uplands apartments must be affordable.

If the ConCom's decision is upheld on appeal to the state DEP, O'Neill could be prevented from building its housing project. However, in 2004 O'Neill succeeded in overturning a 2003 denial by the Belmont ConCom for a research and development or office project on the same site.

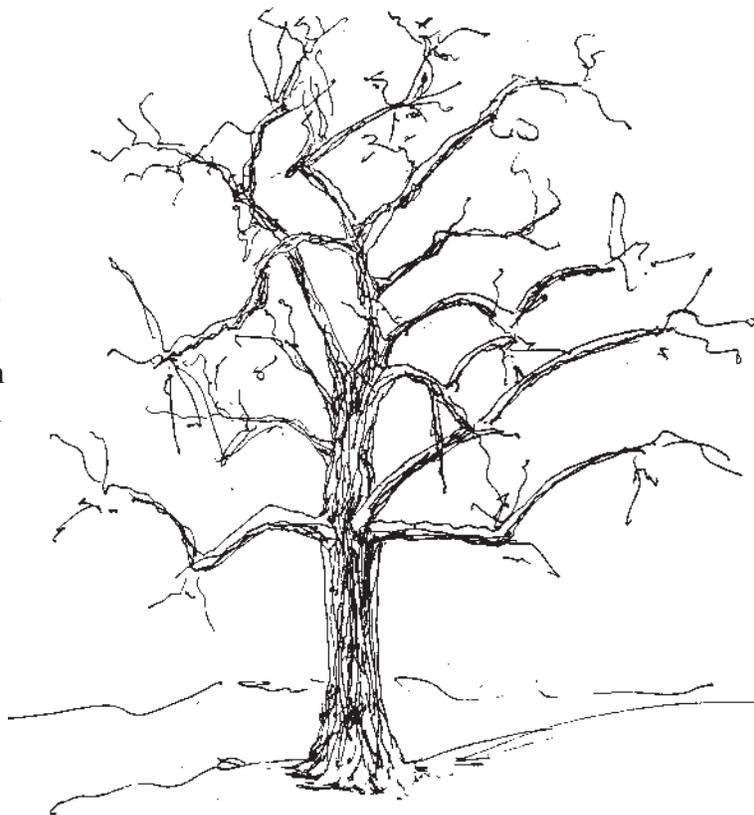
Report Lists Failures

The Belmont ConCom attempted to write an appeal-proof decision this time, with help from two volunteer attorneys: David Webster, a ConCom member, and Tino Lichauco, an associate member. The 60-page ConCom decision

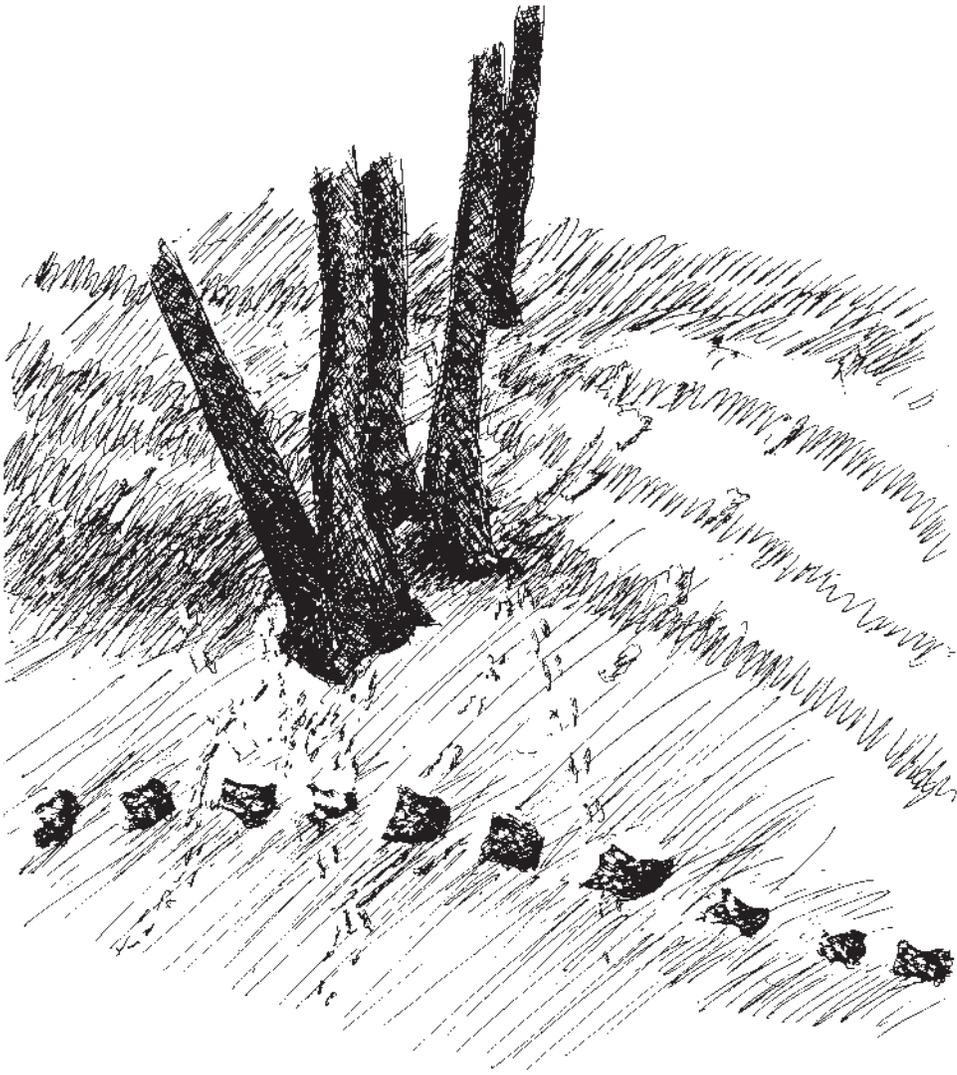
issued on December 20 details 23 ways in which the housing project allegedly fails to comply with state regulations and policy.

For example, to limit the additional water pollution that results when stormwater runs off parking lots and roofs, the state requires new developments to build systems to remove 80 percent of total suspended solids from the stormwater. The ConCom decision says O'Neill failed to meet its burden of

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APPLE



Animal tracks in snow

Uplands *continued from page 3*

proof that its stormwater-handling system would perform that well. The ConCom’s consultant, Scott Horsley, told the commission he does not believe that the project meets the state standard.

Runoff, Infiltration Figures Challenged

The ConCom cited numerous other alleged errors in stormwater calculations and expressed frustration with O’Neill’s failure to provide evidence to support its claims on a dozen technical issues connected with the stormwater system. In several cases, O’Neill’s experts allegedly cherry-picked data, using only facts that were favorable to its case.

“Runoff and infiltration calculations assume different soil conditions at the same location,” the ConCom remarked in one section. “In designing the

three infiltration basins for site drainage, the Applicant used site observations (test pits and percolation tests) to characterize the permeability of the site soils. However, in selecting inputs for the pre-development HydroCAD analysis [using a computer-aided design tool for modeling stormwater runoff], the Applicant ignored these field observations. . .”

“It appears to the Commission that either the soil is permeable, or it is not. Therefore, either the infiltration basin design is flawed and the HydroCAD analysis is correct, or vice versa. They cannot both be correct. The soil does not change its permeability to suit the needs of the designer.”

The ConCom also cited several cases where O’Neill allegedly failed to satisfy the regulations implementing the Wetlands Protection Act – for example by developing alternatives that would avoid altering “bordering land subject to flooding,” a category of land protected by the state law. The

decision also argues that pumping water out of land near protected wetlands as part of the excavation is likely to suck water out of the wetlands itself and is likely to result in significant loss of wildlife habitat.

More Challenges Planned

Other challenges could also affect the Uplands development. The Coalition to Preserve the Belmont Uplands is still awaiting a ruling from the DEP’s Waterways Regulation Program. This ruling would decide whether the former channel of Little River, now little more than a drainage ditch, is protected by state Tidelands law. The DEP originally predicted a ruling last month but now says it will take longer.

—*Sue Bass is a director of the Belmont Citizens Forum .*

Bottled Water Has High Environmental Costs

By Keith Moore and Ulla Hester

Bottled water is one of the fastest growing products on the market. In 2006, Americans spent \$15 billion on a product that barely existed a couple of decades ago. That's 50 billion plastic water bottles or an average of 167 per person. In 2007, bottled water sales were expected to top \$16 billion. But people are increasingly becoming aware of the negative impact of this seemingly benign and healthful product.

Tap Water Is Healthier, Cheaper

Studies have shown that many people drink bottled water because they associate it with healthy living and because of concerns about the quality of tap water. But consider this: U.S. water quality standards set by the Environmental Protection Agency for tap water are more stringent than those set by the Food and Drug Administration for bottled water. About 40 percent of bottled water comes from tap water, not spring water, with the only difference being the addition of minerals that have little proven health benefits.

Add to that the fact that bottled water is at least 1,000 times more expensive than tap water, and tap water starts to look pretty good!

Bottled Water Wastes Resources

So even if bottled water offers no health or safety benefits over tap water, what's the harm? Plenty, when you begin to consider the environmental and social cost.

All those plastic bottles take oil—1.5 million barrels annually just in the U.S.—transformed into polyethylene terephthalate (PET). Worldwide, 2.7 million tons of plastic are used for water bottles each year. Although PET is perfectly recyclable, we're only currently recycling 23 percent of PET. Out of the 50 million plastic water bottles Americans bought in 2006, 38 billion ended up in landfills, where they will remain for up to 1,000 years, the time it takes for PET to biodegrade. Of the bottles which are recycled, about 40 percent are shipped abroad—as far as China—for the actual recycling, further consuming fossil fuels during transport.

We're using plenty of fossil fuels just for transporting the product as well. Six percent of bottled

water sold in the U.S. is shipped from abroad, as far away as Fiji. On top of that, one billion bottles of water are shipped across the U.S. weekly. That's the equivalent of a convoy of 37,800 18-wheeler trucks driving 3,000 miles every week.

Finally, safe tap water requires a good infrastructure. If people opt for expensive bottled water, will they be less willing to invest in the upgrades we need to our municipal water infrastructure? Right now, one in six people on earth do not have access to safe drinking water.

An Exception?

Fiji Water recently announced a series of changes aimed not only at reducing its environmental footprint but actually becoming carbon negative, i.e., making up for more greenhouse gases than it actually produces during the production and transportation of its water. A marketing gimmick? Perhaps. But it might be



worth considering this brand on those occasions when you have to drink bottled water. And don't forget the drinking fountain!

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Belmont's Curbside Recycling Program Expanded

As of December 2007, Belmont residents can recycle corrugated cardboard, coated paper cartons (e.g. milk cartons) and aseptic containers (e.g. juice boxes) in their regular recycling pickup.

Milk cartons and juice boxes should be placed in recycling bins along with glass, plastic, metal, and aluminum containers. Cardboard should be cut into flat pieces no larger than 2 feet by 2 feet and either put in brown paper bags or tied with string into bundles no taller than 9 inches. Pizza boxes are not allowed.

For more information about curbside recycling in Belmont, see www.town.belmont.ma.us/Public_Documents/BelmontMA_Highway/recycling.

Bottled Water Alternatives

Reusable water bottles are the best option. They are available in plastic (choose a hard plastic like Nalgene, as softer plastic bottles leave a plastic taste and there is some controversy about how safe they are), stainless steel or aluminum. Don't forget to clean these bottles regularly with mild soap and water. A few options for reusable water bottles are Nalgene (www.nalgene-outdoor.com), Klean Kanteen (www.kleankanteen.com), and Sigg (www.mysigg.com).

These bottles can be filled up at home with tap water, at water fountains, and (with use of a filter) from lakes and springs. Bring an extra bottle and a

cooler with ice to leave in the car if you prefer cold water at the end of a hike.

Keep several bottles around to minimize the likelihood of getting caught without one (take to work meetings, keep in the car, take to the gym, etc.).

If you have to drink bottled water, and we all know it's pretty much unavoidable in some situations (long-distance flights being one) take the empty bottle home to recycle.

—Keith Moore is editor of the Charles River Mud, a newsletter published by the Appalachian Mountain Club's Boston Chapter; Ulla Hester is an AMC volunteer. A version of this article previously appeared in the Charles River Mud.

Save Water, Save Money, Save the Rivers

By Paul Lauenstein

By 2030, 52 metro Boston communities will exceed their allowable water withdrawal limits according to the Metropolitan Area Planning Council, Boston's regional planning agency. If we want to preserve and maintain our ecosystems, we must learn to use water efficiently.

As the population grows throughout the region, the rainfall that supplies our water will not increase to compensate. Although we receive an average of about 44 inches of rainfall per year in Massachusetts, our higher population density means that the per capita rainfall is actually less than that of Nevada.

Compounding this problem is the growing proportion of land covered by pavement, roofs, and other impervious surfaces that cause rain water to run off into storm drains and flush out to the ocean instead of soaking into the ground. Ponds, rivers, and under-

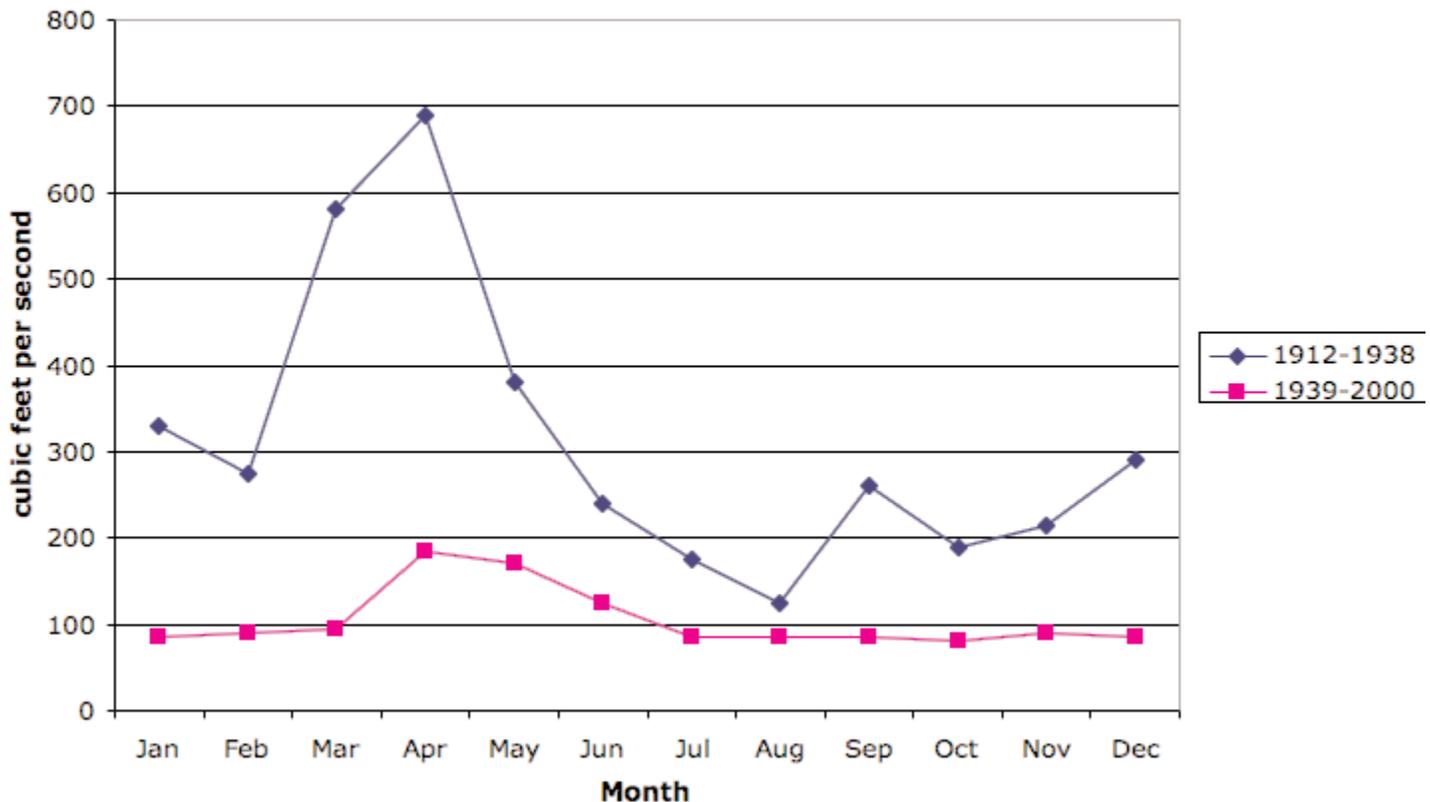
ground aquifers no longer get the slow seep of rain-water they need to recharge.

Each summer, that recharged water is consumed once more: private wells divert the water from aquifers, and public waterworks drain it directly from rivers, drastically lowering the water level in many eastern Massachusetts rivers. Low flow leads to high water temperatures and low concentrations of dissolved oxygen, stressing or killing fish and other aquatic wildlife. The Ipswich River has been known to dry up completely, wiping out fish and other river creatures.

Events right here in Massachusetts, though, show that citizens and government agencies working together can make a difference. One of the greatest examples of large-scale resource conservation is the story of the Massachusetts Water Resources Authority

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Avg. Swift River Flow Pre-Dam and Post-Dam



Graph showing the reduction in the Swift River's flow before and after the Quabbin Reservoir was built, with seasonal variation. Source: *Chicopee River Comprehensive Watershed Assessment* produced by the Massachusetts Executive Office of Environmental Affairs, 2003.

Water Conservation *continued from page 7*

(MWRA), which provides Belmont and many surrounding communities with water. By the late 1980s, water consumption in the MWRA's service area in greater Boston had risen to around 330 million gallons a day, exceeding the 300 million gallon a day "safe yield" that the MWRA's reservoirs could supply without being depleted.

The diversion of all that water for human use had a profound impact on flow in the Swift River downstream of the Quabbin Reservoir (the primary water supply for the Greater Boston and MetroWest area). Something had to be done to ensure Boston's long-term water supply and restore the Swift River ecosystem to a healthier condition.

To meet increasing demand for water, the MWRA planned to divert water from the Connecticut River valley in western Massachusetts, a project that would have cost hundreds of millions of dollars. However, the MWRA met with a firestorm of protest from residents of western Massachusetts. In 1989, on the advice of its citizen advisory committee, the MWRA's

board launched an aggressive water-conservation program, including the following measures:

- Vigorous leak detection and repair efforts on MWRA and community pipes
- The retrofitting of 370,000 homes with low-flow plumbing devices
- A water-management program for businesses, municipal buildings, and nonprofit organizations
- Extensive public-information and school-education programs
- A change in the state plumbing code requiring new toilets to use no more than 1.6 gallons per flush
- Meter improvements that helped track and analyze community water use
- New water-efficient technology that reduced residential use

The conservation program also received a significant boost when sewer and water rates rose dramatically, leading to a decreased demand for water. This rate hike was dictated by several costly but necessary water-system upgrades, including the construction of

Water Use in Belmont and Nearby Communities

Town	Population	Daily Use gallons/person/day	Summer to Winter Ratio (watering lawns etc.)	Unaccounted for Water (%)
Arlington	42,389	88	1.14	Not Reported
Belmont	25,000	73	1.33	2.1
Cambridge	101,355	49	1.15	29
Lexington	31,507	65	1.47	Not Reported
Waltham	61,000	68	1.21	Not Reported
Watertown	32,986	59	1.19	Not Reported
Weston	11,110	104	2.41	9.3

MWRA data as of 2005. Courtesy of Kathleen Baskin.



the Deer Island wastewater treatment facility to clean up Boston Harbor, the installation of the MetroWest tunnel to ensure an uninterrupted water supply, and the purchase of land surrounding reservoirs to safeguard water quality.

As a result, water use in the MWRA service area has dropped dramatically over the past two decades, and it is now well within the sustainable yield of the reservoir system. Water is now available to restore riparian ecosystems downstream and to provide an extra margin of safety to humans and the environment in case of severe drought. In 2005, the system averaged 218 million gallons a day, and in 2006 demand dropped to 212 million gallons a day.

There is still a lot of room for improvement. According to the Massachusetts Water Conservation Standards, average indoor use in a non-conserving home is about 69 gallons per capita per day. A conserving home, by contrast, uses only 36 gallons per capita per day indoors. Water conservation can take many forms, from plugging leaks to upgrading appliances.

Household leaks account for significant water loss. According to the Massachusetts Water Conservation Standards, about 14 percent of the water used in an average non-conserving home is wasted via leaks. Most home waste far less than that, but a minority of homes leak large amounts. A leak does not have to be a gusher to be costly. A steady toilet leak of 0.2 gallons per minute (one tenth of the flow

of a typical kitchen faucet) leaks over 100,000 gallons per year, costing a homeowner over \$500 annually.

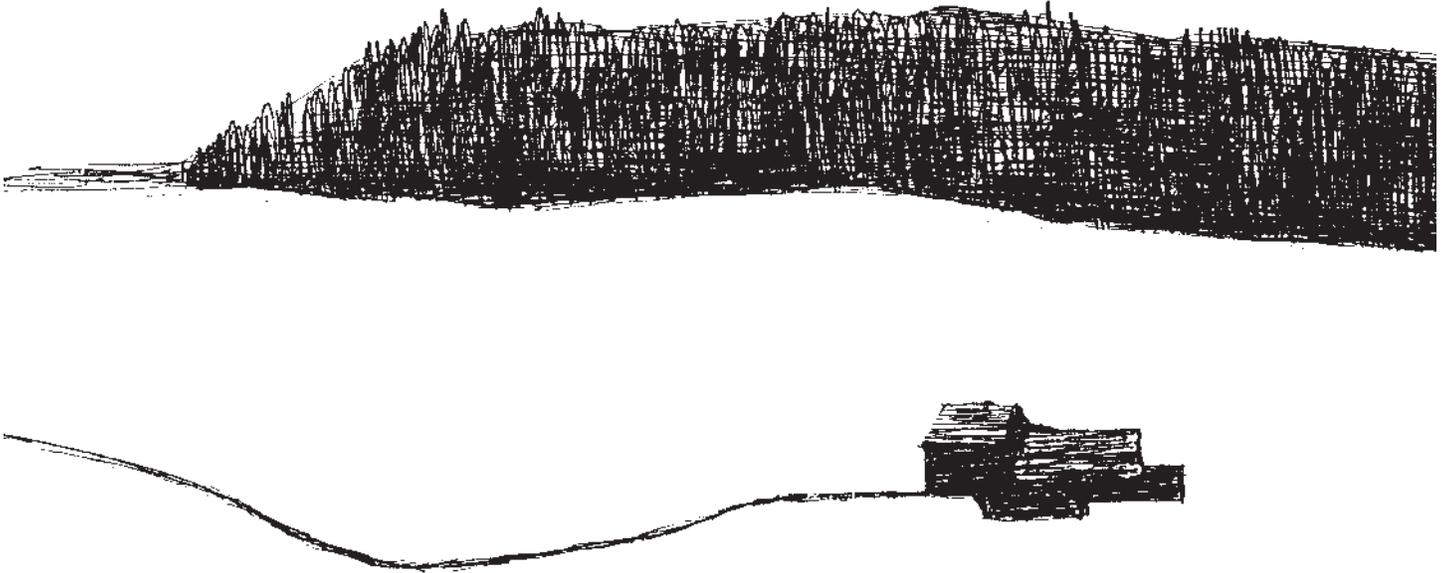
Many new water meters feature sophisticated leak-detection capability. The water meter senses when water never stops flowing in the household and signals the meter reader that a leak is highly probable. These systems have been installed in Boston, Walpole, Norwood, Easton, Brookline, Cambridge, and Medford. In combination with efficient radio meter-reading systems that allow water suppliers to read meters more frequently and reduce labor costs, customers can be notified of leaks in a timely fashion so they can be fixed promptly, saving water.

New Fixtures Save Water

Flushing toilets use more indoor water than any other activity. In 1987, Massachusetts was the first state to change its plumbing code to limit sales of toilets to models using 1.6 gallons per flush or less. By 1994, 1.6 gpf had become the national standard. At first, the 1.6-gpf toilets performed poorly: many models had to be flushed more than once to clear the bowl. However, toilet technology has now advanced



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Water Conservation *continued from page 9*

so much that a new generation of so-called high-efficiency toilets (HETs) has appeared, using no more than 1.28 gpf. Some use as little as 1.1 gpf, yet they flush more effectively than older models that use more water—and they do not overflow. California recently became the first state to pass legislation to phase in HETs over the next seven years. Hopefully, Massachusetts will not be far behind.

Front-loading washing machines also provide significant water savings. Most front-loading clothes washers use about half as much water as top-loading

models of similar capacity. That translates to a difference of 5,000 to 8,000 gallons a year for a typical household, reducing sewer and energy bills as well as water bills.

Replacing a standard 2.5-gallon-per-minute showerhead with a unit that uses only 1.5 or 2 gallons per minute can save over 2,000 gallons of heated water per year for as little as \$12. Some new low-flow showerhead designs even provide the sensation of the old, water-guzzling showerheads (take the tour at www.oxygenics.com/magic.html).

Another change that can save both water and money is reducing the amount of water used for landscaping. Many lawn irrigation systems use profligate amounts of water in summer, just when the drought-stressed environment can least afford to part with it. A household with a half-acre of lawn and an automated irrigation system that applies a 1/2 inch of water every week uses over 135,000 gallons over a 20-week season just for lawn irrigation—far more than the 90,000 gallons a typical household uses for all purposes in an entire year.

As much as 70 percent of the water used for irrigation is lost to evaporation, especially when people irrigate during the heat of the day, instead of during the night when it's cooler. A lawn only needs an inch of water a week to stay green. Here in New England, we average 3 to 4 inches of rain a month, so the amount of supplementary water needed is often much less than what is actually used. Sophisticated irrigation-system controllers that factor in the moisture content of the soil as well as the weather

Water Conservation Web Sites

The following web sites offer advice on home water conservation and on water-wise appliances:

- www.cuwcc.org
- www.h2ouse.org
- www.us.kohler.com
- www.actonh2o.com
- www.oxygenics.com
- www.energystar.gov
- www.epa.gov/watersense

Letter to the Editor

Dear Editor:

Your “underpass” article in the [September 2007] Forum is excellent.

For newcomers it is scary, rather appalling, but for those of us who have lived with it for years, it works very well. We have tried traffic police —did not work at all —in fact worse + lights are not feasible.

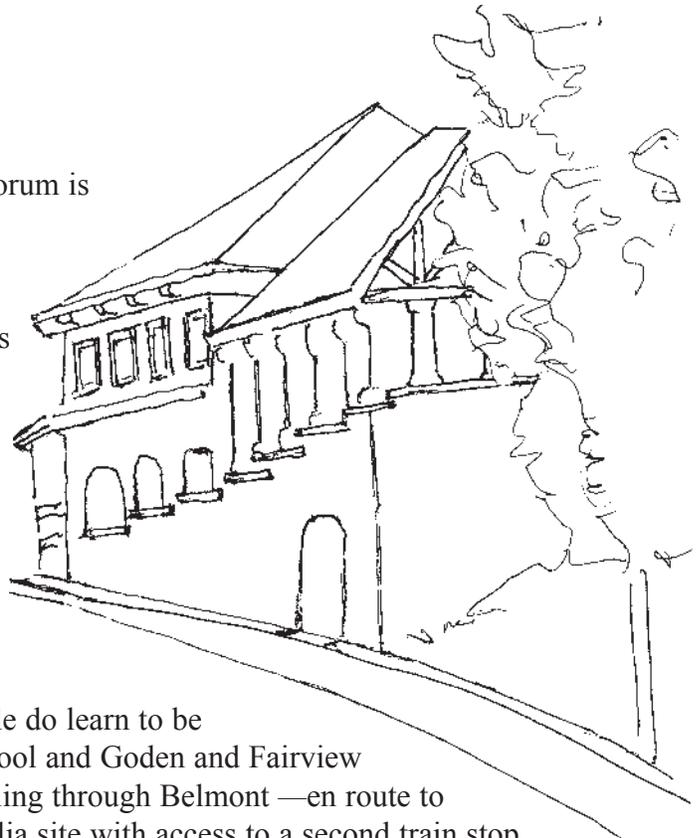
The bridge belongs to the MBTA, it is in the Historic District and “treasured” by the MBTA. They made the mistake in Winchester of doing it away with theirs. It “rotarizes” but is more than ugly from most angles.

The 2nd generation “calming” is the answer + people do learn to be polite. The new 4-way stops at Washington and School and Goden and Fairview work very well. Of course too much traffic is funneling through Belmont —en route to everywhere. We need regional parking at the De Milia site with access to a second train stop. Not to mention town income from parking, etc.

Thanks, the Forum is providing a much-needed source of information.

Sincerely,

Lydia Ogilby



can significantly reduce wasteful irrigation practices, as well as pay for themselves in lower water bills.

There are several other easy ways to maintain a healthy lawn without watering. Soil with high organic content retains moisture like a sponge, helping grass survive in dry weather. To gradually build up your lawn’s organic content, try an annual application of weak organic fertilizer. Leaving grass clippings on the lawn also increases the organic content of the soil. Cutting the grass tall (2.75 inches to 3 inches) shades the soil, slowing moisture loss. Finally, try cultivating drought-tolerant fescues rather than thirsty bluegrass.

In our home, we averaged about 31 gallons per capita per day from May through October 2007. Our water bills total less than \$100 a year. We have two

high-efficiency toilets that use 1.1 gallons per flush. We have a front-loading clothes washer and low-flow showerheads. The water department in our community helped out by providing rebates for part of the cost of these water-efficient devices.

Not only do we save money in our household, but we are also helping contain water costs for our community. The less water our town uses, the lower the energy and chemical-treatment costs associated with providing water in our community, and the lower our water bills will be in the long run. The best part, though, is knowing that we are helping to create a more sustainable world.

—Paul Lauenstein is a citizen water-conservation advocate living in Sharon.

Traffic *continued from page 1*

ties: schools, workplaces, parks, and stores are built far apart with large parking lots, Schrieber said. To drop off children at school, go to work, get children to soccer at the park, and buy groceries could require parking six times in four different lots and making twelve turns into traffic (see illustration below). Clustering all these activities around a single parking lot can reduce the land needed for parking, the turns into traffic, and total driving time.

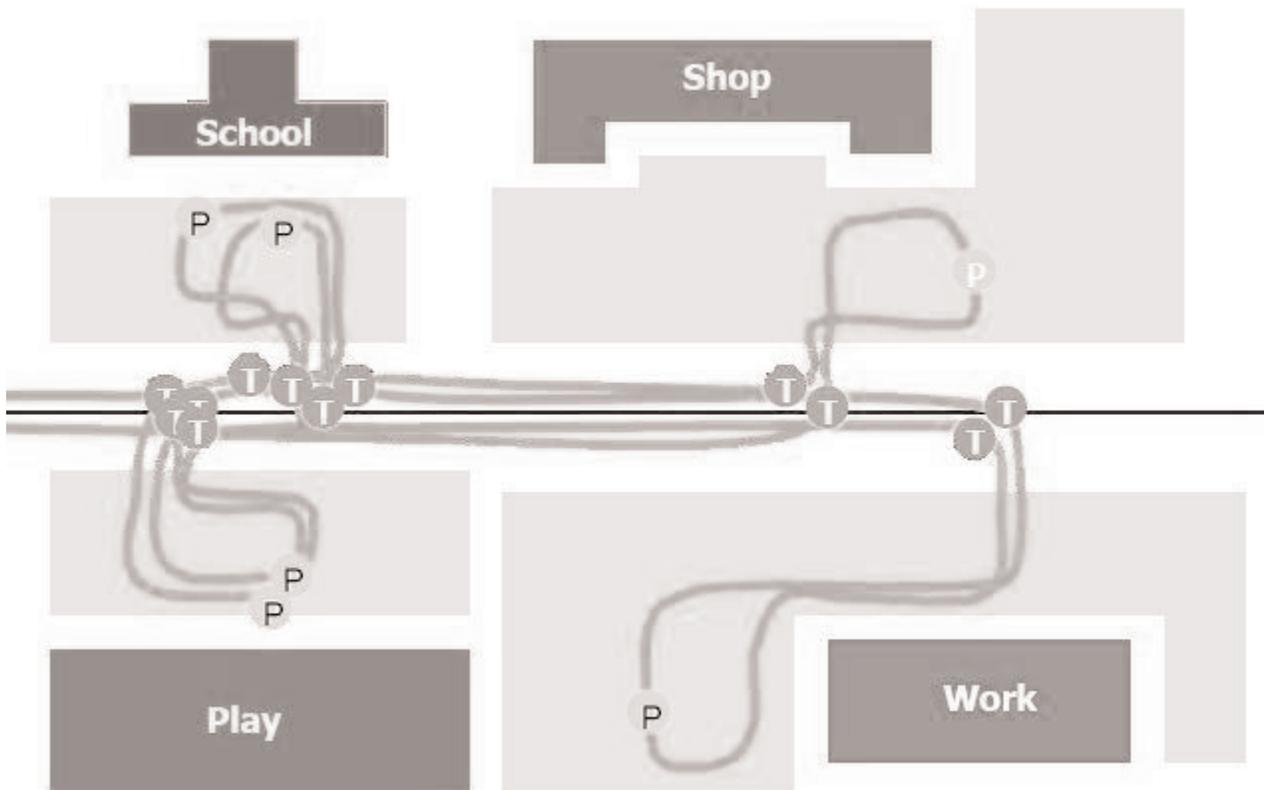
“How can we get more out of existing roads, railroads, and rights of way?” asked Gascoigne. The traditional solution, he said, is to build more roads. “But most cars on the road have just one person ... If we can get 5 to 10 percent of people to make a change, it will make a big difference.” There are four basic ways to get around without a car, Gascoigne said: human power like walking or biking, shared rides, public transportation, and trip avoidance (such as telecommuting or compressed workweeks).

Shuttle Buses Can Succeed

In Cambridge, large employers are required by law to provide shuttle buses for employees. The Charles River Transportation Management Association (TMA), Gascoigne’s association, runs those shuttle buses and provides “guaranteed ride home” taxi vouchers for transit commuters who need to get home for a personal emergency. Zipcar leases cars by the hour to members who only need automobiles occasionally.

Gascoigne cited the success of his association’s EZRide shuttle between North Station, Kendall Square, and Cambridgeport: since the shuttle began running in 2002, the ridership has quintupled, from 210 daily passengers to 1,021. Gascoigne credits several factors:

- A gap in service—there had been a lack of public transportation between North Station and Kendall Square.
- A nonprofit-sector local champion—the Charles



Conventional development displaying a typical driving and parking pattern for a parent who drops off a child at school, goes to work, retrieves the child, then take the child to a sports practice and goes shopping. Capital Ps indicate parking; circles with a T indicate a turn into traffic. Graphic provided by Jason Schrieber/ Nelson Nygaard Associates.

River TMA.

- State funding for a pilot project—a start-up grant.
- Municipal support— Cambridge’s regulation requiring business support for the shuttle.
- Secure post-grant funding

“A Real Missed Opportunity”

Caroline Connor, executive director of the 128 Business Council, a TMA based in Waltham, called the traffic-mitigation plan for development at McLean “a real missed opportunity.”

Connor’s group, the Route 128 Business Council, runs shuttle buses to mitigate traffic on many routes, including shuttles between Waltham and the Alewife T station. When Waltham and Lexington negotiate with developers, they insist that the builders fund shuttle buses and create parking for van-pool and car-pool riders.

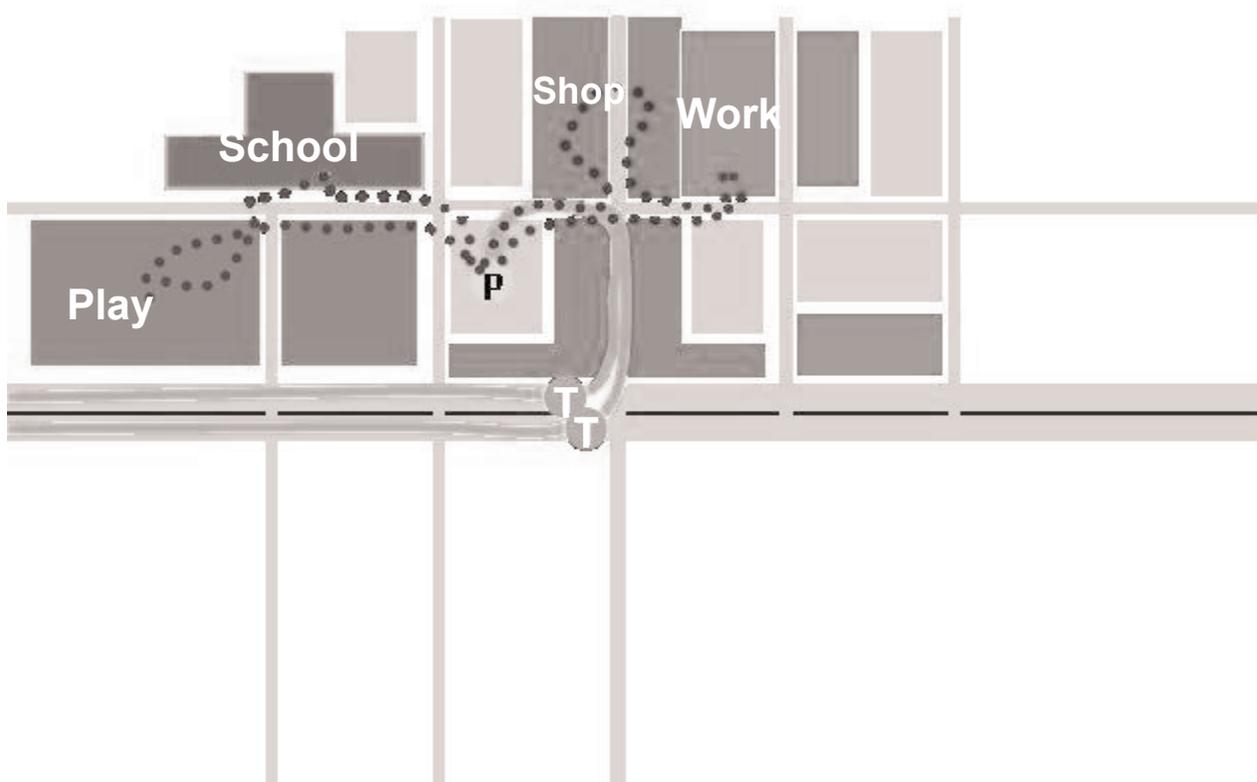
By contrast, the McLean developers committed to little more than a new traffic signal, largely paid for by the Massachusetts Highway Department. “Having

worked for 15 years with Waltham, this is very frustrating,” Connor said. “Towns [like Belmont] don’t understand that developers will [always] be in the area ... If you want them to fund shuttle services, they need to fund the service [to get permission to build in town].”

McLean could have included plenty of other traffic mitigation measures, such as subsidizing T passes for employees or installing bike racks, Connor said. “Stronger tactics ... can be extremely effective if towns require developers to comply with Massachusetts Rideshare regulations.” The Massachusetts Rideshare regulations require companies with more than 1,000 employees to plan to reduce ride-alone car commuting by 25 percent (see sidebar on page14).

“That’s why we run shuttles,” Connor said. The 128 Business Council has been running shuttle buses from Waltham to Alewife since 1989. Businesses and apartment buildings now use the shuttles as a marketing tool.

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A park-once district showing the typical parking and walking patterns (dots) for the same parent and child. This district serves the same functions as the conventional plan, but uses half the land, and requires the driver to make 1/4 the trips and 1/6 as many turns. In all, the busy parent drives 1/4 the miles as in the conventional development. Graphic provided by Jason Schrieber/Nelson Nygaard Associates.

The Massachusetts Rideshare Program

Smog in Massachusetts exceeds the U.S. Environmental Protection Agency's standard for ground-level ozone. Smog is formed when sunlight reacts with three types of air pollution: nitrogen oxides, carbon monoxide, and volatile organic compounds. Automobiles are the largest contributor to smog, producing over 50 percent of all nitrogen-oxide and carbon-monoxide pollution and 20 percent of volatile organic compounds. In order to reduce ground-level ozone, the state adopted the Massachusetts Rideshare regulation to cut air pollution from automobiles.

Under the Rideshare regulation, businesses and schools with more than 1,000 commuters and smaller firms that produce air pollution must study commuting patterns at their offices and plan to reduce the number of people driving alone to work by 25 percent. They must

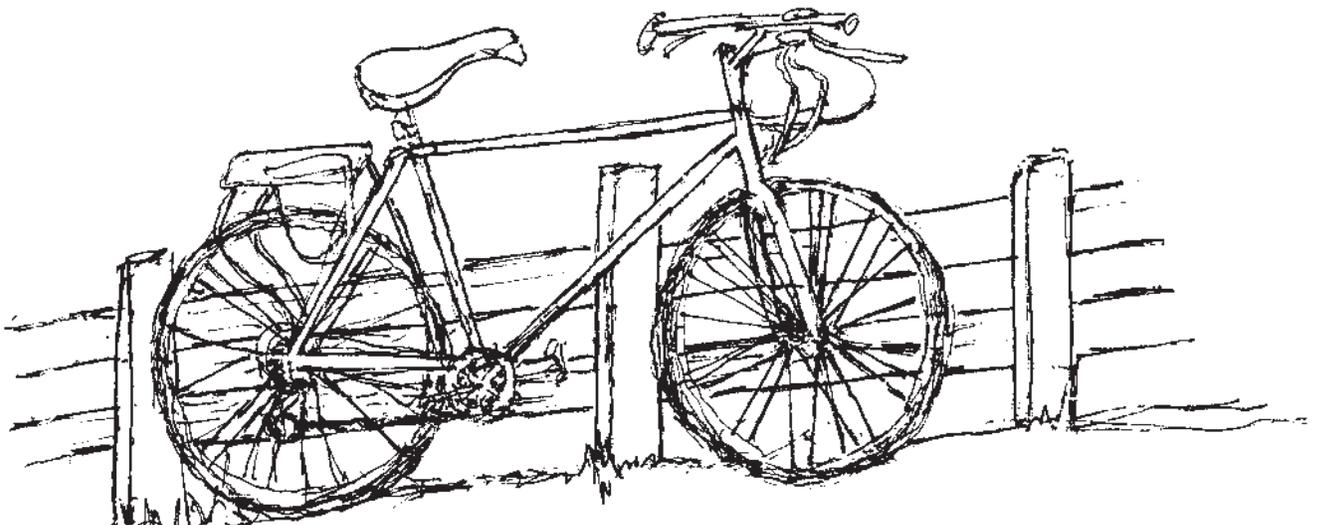
- conduct carpool matching to help commuters find rides to share;
- set aside preferential parking spaces closest to building entrances for car pools and van pools;
- establish bicycle incentives, such as subsidies.

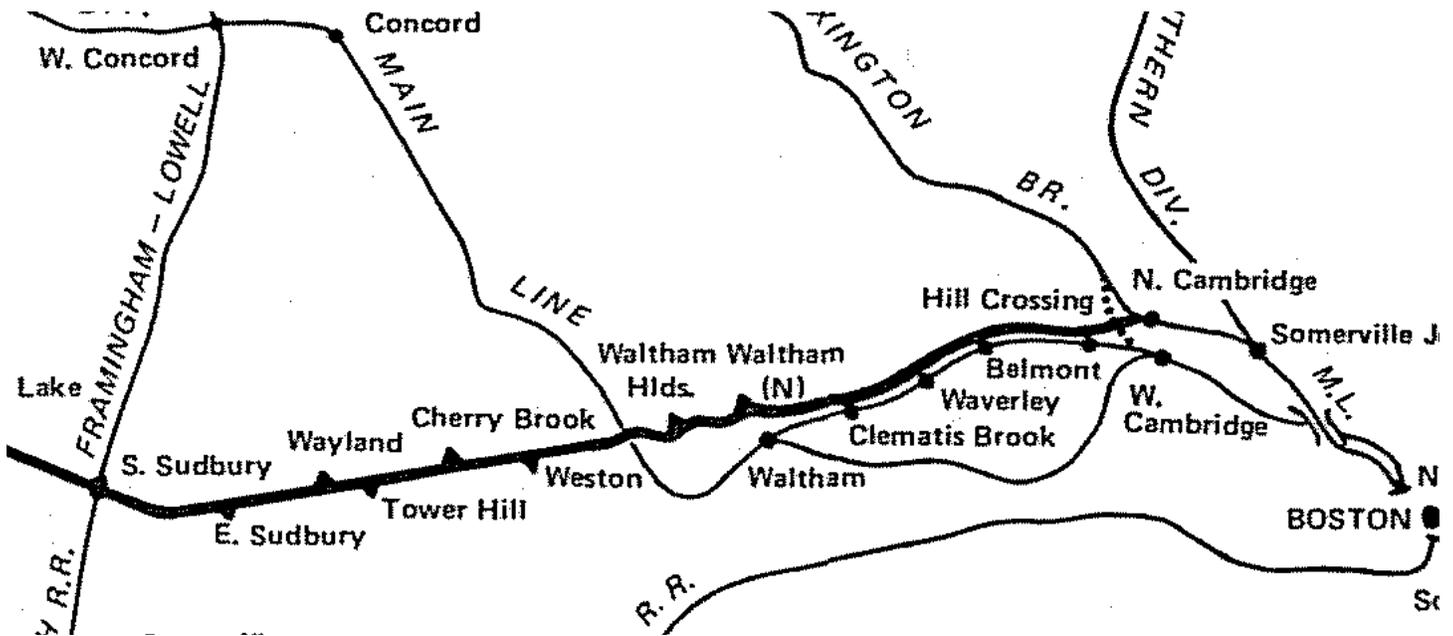
If the organization is within a mile of public transit, they must also

- negotiate for improved public transit to their facility by contacting the MBTA, regional transport authorities, and bus carriers;
- provide commuters with the option to purchase transit passes on-site;
- post schedules, rates, and routes for public transit.

Organizations typically accomplish these tasks by working with a traffic management agency (TMA) to create shuttle buses, van pools, and guaranteed ride-home programs or by offering incentives like subsidies for riding mass transit.

For more information about transit options for firms subject to the Rideshare regulation, see Mass Commute, an organization for TMAs, at www.masscommute.com and MassRides, the Massachusetts Executive Office of Transportation's program, at www.commute.com.





A map of the eastern portion of the Mass Central Rail Trail (dark line with triangles) and other historic eastern Massachusetts rail lines. The first portion of the trail has been finished: the Norowottuck Rail Trail, an 8.5-mile path linking Northampton, Hadley, and Amherst. Image courtesy of Craig Della Penna.

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Calm Traffic Saves Lives

As driver's ed teaches, "Speed kills." And it is remarkably deadly. When a car hits a pedestrian at 40 miles an hour, the pedestrian will die 80 percent of the time—and even a 30 mph crash will kill 50 percent of pedestrians, said Nelson/Nygaard consultant Jason Schrieber. At 20 mph, though, only 10 percent of crashes are fatal.

Good design that slows cars improves safety for cars, bikes, and pedestrians, Schrieber said. Roundabouts—small rotaries for which cars must slow way down—reduce crashes by 39 percent and fatal crashes by 90 percent. Glenn Clancy, director of Belmont's Office of Community Development, said that the new roundabout at the intersection of Washington Street, Blanchard Road, and Grove Street has also improved traffic flow.

"Road diets" to reduce streets' width also save lives. Roads that are only 40 feet from curb to curb have 80 percent fewer accidents with injuries than streets 50 feet wide; roads that are only 24 feet wide have almost no accidents at all. In Seattle, trimming streets from four lanes to three cut collisions anywhere from 28 percent to 61 percent—even as average daily traffic increased. And simply having a "leading pedestrian interval" at traffic lights, allowing

pedestrians to cross before drivers start moving and making turns, reduces pedestrian injuries by 25 percent, Schrieber said.

Make Way for Bicycles

The Minuteman Bikeway is Boston's best-known rail trail, a former railroad bed converted to a trail for walking, biking, and many other uses. More than 200 rail-trail projects are underway in southern New England and eastern New York, for some very good reasons, said Craig Della Penna, coordinator of the Mass Central Rail Trail Coalition.

A typical rail trail has five times as much "edge" as a rectangular park, making it more accessible to more people. Ball parks and soccer fields are used mainly by people participating in organized sports; rail trails are used by people of all ages at all times of day, from morning bike commuters to inline skaters to parents with strollers and grandparents with walkers. Rail trails also tend to run through the middle of communities, Della Penna said, making them convenient to more people. Rail trails increase the value of neighboring homes, said Della Penna, who is also a real estate agent specializing in homes abutting rail trails. "People love living near places like this," he commented.

Although more than 70 percent of Massachusetts's

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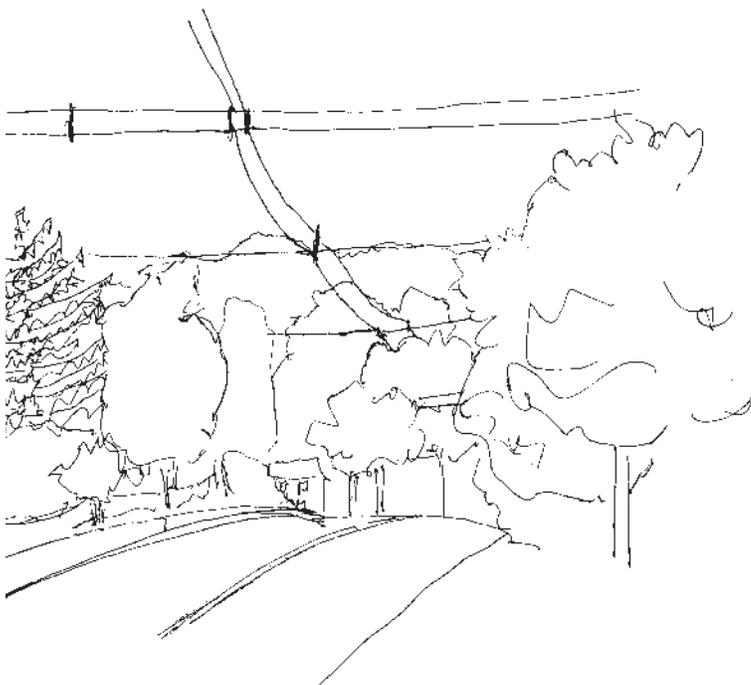
Traffic *continued from page 15*

historic railroad beds have passed into private hands, 75 rail-trail projects are under way in the state right now, Della Penna said. Most of them are short, but the proposed Mass Central Rail Trail will extend 104 miles from Boston to Northampton, through Waltham and Belmont, when it is finished. The westernmost segment of that trail is now open to pedestrians and bicycles.

Unfortunately, building rail trails in Massachusetts is a slow process. While a rail trail in Nashua was built in just three years, it has taken 22 years to get construction started on the first segment of the Bruce Freeman Rail Trail, a 6.8-mile stretch through Lowell, Chelmsford, and Westford, said Della Penna. Another 17.7 miles of the same rail line are still merely “proposed extensions.”

Talk to the T

Sandra Clarey, a service planner for the MBTA, detailed Belmont’s current public transit. About 3,500 riders use Belmont’s buses and train service every day—about 12 percent of the population. Though the T has no current plans to change Belmont’s transit, residents who have ideas for changes can write to MBTA staff with suggestions for the 2008 service plan at ServicePlan08@mbta.com; writers with general comments on the MBTA should contact feedback@mbta.com or call 617-222-3200. The plan will be released and discussed at public workshops in



the spring and implemented in the fall of 2008.

Joe Cosgrove, MBTA Director of Planning, discussed the MBTA’s unfortunate finances: with the largest debt burden of any transit authority in the country, the T gets 83 percent of its money from the federal government and T revenues, and 17 percent from state subsidies. Over 90 percent of the T’s budget gets spent on infrastructure, with a little over half of that allotment spent on maintaining and upgrading subway, commuter-rail, and silver-line tracks and stations. The 2008 Program for Mass Transportation, the T’s 25-year plan, emphasizes infrastructure investment.

Local Traffic Can Change

Belmont has three local entities that try to solve traffic problems, said Glenn Clancy, director of Belmont’s Office of Community Development: the Traffic Advisory Committee (TAC), the police department’s traffic division, and the town engineer (Clancy himself). The TAC, which consists of volunteers appointed by the selectmen, is charged to advise the selectmen on pedestrian, vehicular, and bicycle safety. The police department’s traffic department is the “public outreach” arm of Belmont’s traffic management. “People call them when there’s a problem,” Clancy said. The town engineer reviews traffic hot spots, but the town’s solutions are constrained by the Manual on Uniform Traffic Control Devices published by the Federal Highway Administration. The manual specifies where stop signs, lane stripes, and hundreds of other traffic controls can be placed, so that drivers traveling between towns and states won’t be confused by local variations on signs.

Belmont has implemented some traffic calming and mitigation measures when streets are reconstructed, Clancy said. Traffic calming, or redesigning streetscapes to slow cars and reduce accidents, takes many forms in Belmont: curb extensions, or “bump-outs,” on Cross Street, White Street, and Trapelo Road, which make it easier for pedestrians to cross the street; raised crosswalks at the Winn Brook and Butler schools, which make children more visible to motorists; and other raised intersections. “They tell motorists, ‘Something different is going on here,’” said Clancy.

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

Events *continued from page 1*

opportunities for environmental projects in the future. Meet at the Lesley University Porter Square Building, 1815 Massachusetts Avenue, second floor. Parking in rear. For more information call FAR at (617) 415-1884.

Teaming with Microbes: the Gardener's Guide to the Soil Food Web.

Thursday, January 31, 7-8:30 p.m. No one ever fertilized the redwood forests. So how did those trees grow to 350 feet and live for over 500 years without applications of Magic-Miracle-Fertilizer? You can begin to understand how by attending this entertaining lecture by Jeff Lowenfels, former president of the Garden Writers of America, garden-radio-show host, and author of *Teaming with Microbes: A Gardener's Guide to the Soil Food Web*. Lowenfels will present the basics of chemical-free gardening, which rely on making use of microbial activity in the soil. He will explain how soil microbes work, what you can do to encourage them, and how they might afford you more leisure time in your garden. Learn the science that explains why chemicals and gardening don't mix. Sponsored by the New England Wildflower Society, Massachusetts Horticultural Society, and Arnold Arboretum: fee \$20 for members of sponsoring institutions, \$25 for non-members. Meet at Massachusetts Horticultural Society's Elm Bank Horticultural Center, Wellesley. For more information contact the New England Wildflower Society, (508)877-7630 or www.newenglandwildflower.org.

Backyard Sugaring. Saturday, February 2, 12:30-4 p.m. Do you have a sugar maple or two in your yard? Do you love maple syrup? If so, then join us to learn how to make your own delicious syrup. We'll cover everything—tree identification, equipment, tapping, weather, boiling, finishing, and storing—that you need to get started on this sweet project. Cosponsored



by New England Wildflower Society and Massachusetts Audubon's Drumlin Farm Nature Center. Fee \$25 NEWFS/ Audubon members, \$35 nonmembers. For more information, contact the New England Wildflower Society, (508)877-7630 or www.newenglandwildflower.org.

Watertown Walks! February Moonlight Walk. Saturday, February 24, 6 p.m. Join Watertown Walks for "A Moonlight Walk." Watertown Walks sponsors monthly group walks to promote walking for fun, fitness and a healthier community. On this month's walk, participants will experience Charles River views under the light of a full moon. Meet at 6 p.m. at the intersection of North Beacon Street and Greenough Boulevard, Watertown. Come prepared to

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FORSYTHIA AND YEW

Events *continued from page 17*

walk—wear comfortable shoes (boots if there is snow), water, a flashlight and bring a friend! If the ground is snow covered, bring your snow shoes. Watertown Walks! is sponsored by Watertown Citizens for Environmental Safety. For more information, call (617) 926-0726, or email walking@watertowncitizens.org.

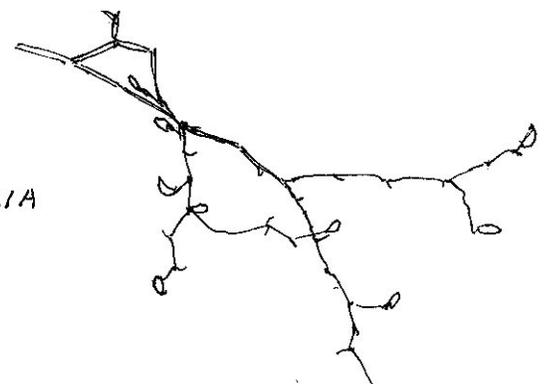
Lester Brown to Speak in Lexington. Sunday, February 24, 7:30-9:00 p.m. The Lexington Global Warming Action Coalition presents Lester Brown, founder and president of the Earth Policy Institute. Brown has been described by the Washington Post as “one of the world’s most influential thinkers” and as “the guru of the global environmental movement” by The Telegraph of Calcutta. He is the author of numer-

ous books, including *Plan B 3.0, Mobilizing to Save Civilization*, in which he outlines a survival strategy for our early 21st-century civilization. Brown outlines an ambitious plan that includes cutting carbon emissions 80 percent by 2020. *Plan B 3.0* is a comprehensive plan for reversing the trends that are undermining civilization. Brown founded Worldwatch Institute, of which he was president for its first 26 years. The talk will be held in Cary Hall, 1605 Mass., Ave., Lexington. Admission is free. Copies of *Plan B 3.0* will be available for sale, and the author will stay to sign copies for audience members. For more information, see www.lexgwac.org.

Winter Mushrooms. Sunday, March 2, 10 a.m.-noon. Mushrooms in the winter? We'll start indoors going over a few field guides, slideshow, lore, ID techniques, and maybe a strange story or two, before heading out to see what awaits us. We'll visit a few spots where we might find examples of fungal life ... even at this time of the year. Meet at

Habitat Education Center and Wildlife Sanctuary, 10 Juniper Road, Belmont. Program fee \$12 for Mass Audubon members, \$15 for non-members. Sponsored by Habitat. To register for this program contact Habitat at (617) 489-5050 or habitat@massaudubon.org.

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Make checks payable to Belmont Citizens Forum and mail to Belmont Citizens Forum, P.O. Box 609, Belmont MA 02478. Thank you!

School Buses *continued from page 20*

paying for their children's school bus service or doing without since 1993. Last June, families had to pay \$350 per student for up to two children to ride school buses the next school year; additional children ride free. If the family waited until September to sign up, it cost \$400 per child.

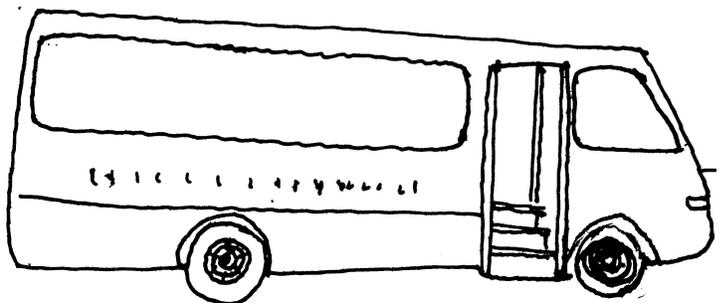
Belmont schools charge for school bus service because our schools are under severe financial pressure, and have been for years. But what if the town paid for school buses for all students as a method of reducing traffic congestion? There are a lot of student trips per day, and so a lot of car trips might be eliminated. Traffic seems better in the summer when school is out. So what makes more sense: a school bus carrying 40 students through Belmont Center or 40 students in 40 cars being driven by 40 parents through Belmont Center?

Of course, buses are not a perfect solution for congestion. Many students stay after school for sports and other activities, so school buses may not work for them, and some high school students like to drive to school. If Belmont drivers suddenly stopped driving back and forth to schools so much, would the less-congested Belmont streets present an opportunity to

out-of-town drivers who would cut through in greater numbers?

School buses here in Belmont are an example of the problems and limitations of using shuttle buses to reduce traffic congestion. Shuttle buses have many of the same unattractive features as school buses: waiting for the bus, wondering if the bus will come before you freeze, schedules that are never perfect, and stops that slow the trip. However, there is one feature of shuttle buses that school buses do not have. With proper planning, employers will pay for shuttle buses. It has happened in other communities, including Cambridge and Waltham. Why not here?

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



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People Are Asking

What's Wrong with School Buses?

By Sumner Brown

Maybe it's where I live, but I see few school buses in Belmont, and the buses I do see are mostly empty. However, whenever I get near a Belmont school around opening or closing time, there is a nasty traffic jam. Of 3,708 Belmont students, only 748 use buses. Walking is not popular either. All the students at Butler live close enough to walk, in the sense that they live close enough that the school system offers no buses for Butler students, but there are still large numbers of cars delivering students. No statistics are

available about who drives and who walks.

School buses are my favorite shuttle buses. They seem to be a wonderful solution to an obvious problem: how to get lots of students or employees to a few schools or workplaces. A single school bus carrying forty students makes better use of Belmont's roads than forty private cars driven by forty parents carrying forty students. Why don't more students ride buses to school? Why don't more workers take car pools, van pools, and shuttle buses to work?

School buses cost money. The town buys school bus service from a school bus company. This year the service purchased by the town costs about \$300,000. One hundred and seventeen students who live more than two miles from school get free bus service, but most families of students have had to choose between

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