



Healthier Homes: To Be or Not to Be?



Introduction

Each of us wants our homes to be a refuge, a sanctuary from the world, a place where we are physically safe and secure. Many of us don't even think about our safety at home; we simply take it for granted. We take the availability of our homes for granted as well, unless faced with a catastrophic loss of our housing. Only a crisis, such as fire, a marital separation or divorce, or loss of a regular income due to job loss or retirement, brings us newly into the housing market and requires us to look more closely at the situation.

Likewise, only a diagnosis of asthma or lead poisoning in a child may make us look into the aspect of the healthiness of our homes. It is easy and natural to work on the presumption that everything is fine, until faced with information to the contrary.

"Meeting Lowell's Housing Needs: A comprehensive Look," examined the state of housing in the city of Lowell and showed how energy and resources at all levels in the community is needed to improve the state of housing in the city of Lowell. Specific strategies and suggestions were proposed to help develop a vision of how we might work to create more stable housing, and the better economic development that should accompany it.

This addendum considers one important aspect that was not included in the original Housing Report; the physical healthiness of homes in the greater Lowell area.

Like other housing issues, providing 'healthy homes' can be accomplished at several levels. An individual can make his or her home healthier by making modest changes. There is much that the individual family can do to improve the health of a home environment. The information on what steps individual families can take could be more widely disseminated to the public in a coordinated effort by churches, the city, and other civic groups. City government could offer incentives for developers to seek 'greener' options to their development. Community groups could train outreach workers to contact segments of the community that are isolated by age, class, culture, or language and provide them with information that would otherwise be unavailable to them.

There is also much an individual cannot do. Often, with the scarcity of available housing, a person cannot move, because there is nowhere else affordable to go in the region. An individual cannot test his or her home for some hazards, such as lead or radon, without assistance from those who have the tools, money and expertise to do so.

If a priority is placed on healthy housing, as well as on housing availability and affordability, we gain a more complete vision of our potential as a community. We can choose to direct our energy to a prosperous and healthy future for all citizens. Lowell has the potential to be a model for other cities with similar industrial histories, heading toward the future with vision and direction. The first step is the desire by the leadership and the community to find and claim the common goal.

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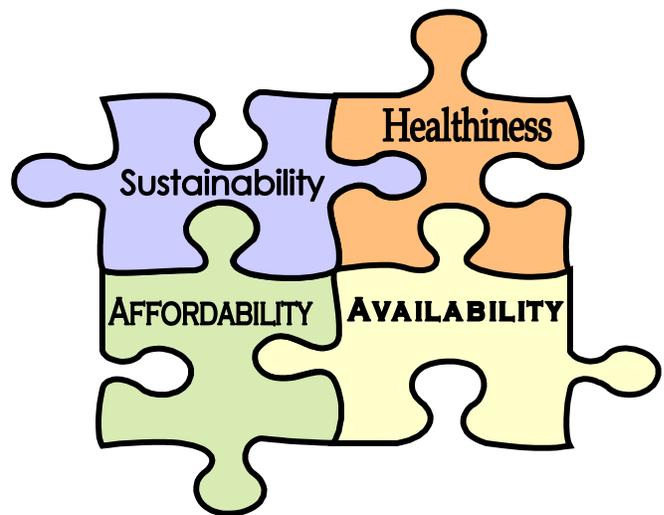
1. With all of Lowell’s housing related problems, why should ‘healthy homes’ even be a concern? Isn’t the quantity of housing itself a greater priority? Why should the community and its leadership concern itself with ‘healthiness’ of housing?

As the housing report indicated, availability and affordability are indeed critical issues in Lowell and the surrounding communities. And since that report was written, housing costs have continued to rise in the Merrimack Valley. We need more housing, and better quality housing. This could mean new construction or it could mean recovering more of our abandoned but usable mills that could be converted to living spaces. It could mean greater density in some parts of the city that are more sparsely populated. It could mean more “McMansions” or it could mean high quality affordable and healthy housing. Those are very real choices we face. What happens next is up to us.

As a community, we have a choice of ignoring the healthy housing piece of the puzzle of housing or embracing these concerns. We can incorporate healthiness into our larger vision for housing, or we can attempt to retrofit later. Anyone who has ever remodeled knows the potential perils of putting on an addition. Often the process includes compensating for what someone else has done, perhaps with the best of intentions but with a lack of knowledge.

The housing puzzle:

We can choose to ignore healthiness as a housing issue or we can choose to incorporate it into the solutions being generated to increase housing availability. But ignoring healthiness might be a bit like getting your car engine fixed but ignoring the fact that the car needs brakes too. It is probably not long before a even more costly accident occurs that could have been avoided with forethought. Healthiness needs addressing at some point, so why not now, in conjunction with other housing solutions? Let’s go forward with a ‘vehicle’ that can complete the course well.



Also, by thinking ahead, we have the opportunity to prevent the negative outcomes of unhealthy environmental conditions, and save both the individuals and the community from the damage of environmental toxins. Each child damaged by lead poisoning or sidelined with asthma drains our community resources and reduces their individual quality of life. Doesn’t it just make sense to prevent damage rather than remediate?

Take home point: Housing is a complex issue. Building wisely, we can save ourselves time and energy, and promote better health for the community. We have the ability to produce high quality affordable housing if we choose to do so. But we will all need to work together.

Next steps: Consider how your group can contribute to the healthiness of housing in the local area. Can you increase awareness of healthy housing issues in your membership? Can you build healthier housing? Can you increase both the quantity and healthiness of the housing you’re currently involved in? Can you connect your membership with community resources to improve the health of their current homes? Can you help your membership understand the unhealthiness of smoking, for themselves and others? What can you do?

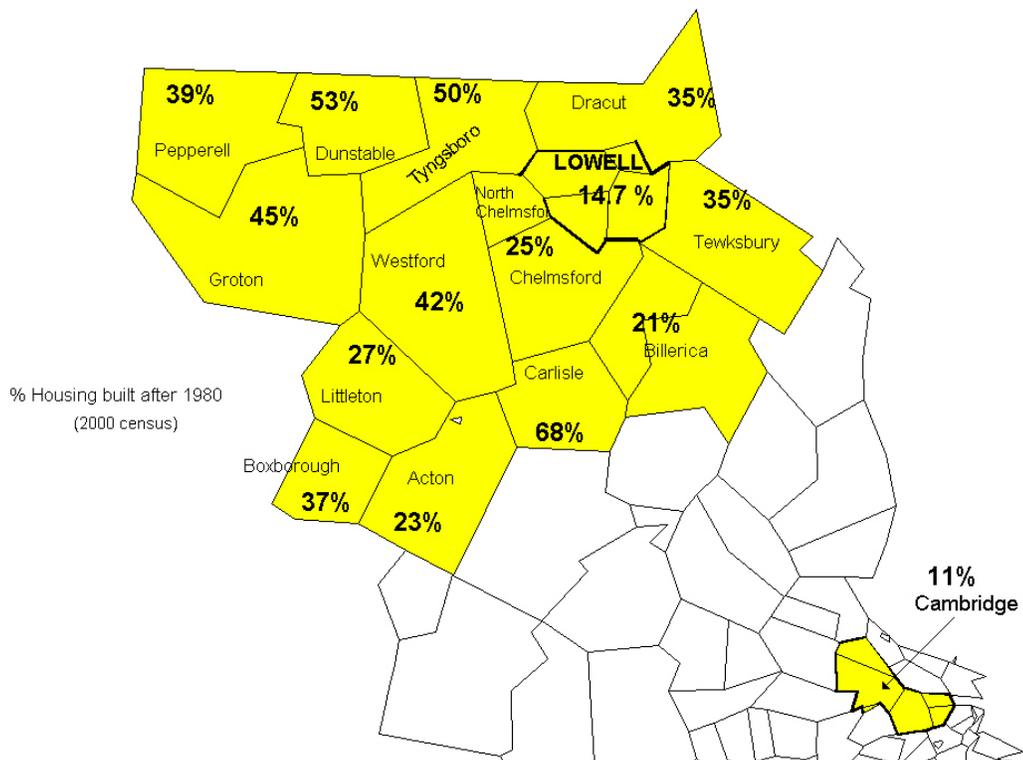
2. What is a healthy home? What is an unhealthy home? What contributes to making a home unhealthy? What factors make Lowell uniquely unhealthy? What factors are common to all homes, old or new?

A healthy home is one in which housing related environmental hazards are minimized, and the occupants of this housing are therefore protected from health damaging effects of those hazards. Much of what can be done to produce a healthier home environment is easily accomplished, once the occupant is aware of the problems. Other hazards are more difficult to eliminate. But the first step in any healthy homes perspective is awareness. Below is a quick summary of some of the “big” hazards that we need to consider.

Lead: Lead is an environmental pollutant that is a special problem here in the Northeast. Two major sources of environmental lead are lead paint, and lead contaminated soil that resulted from using lead as a gasoline additive for years before its recent elimination. Soil near intersections is especially likely to be contaminated, from the years that traffic idled nearby.

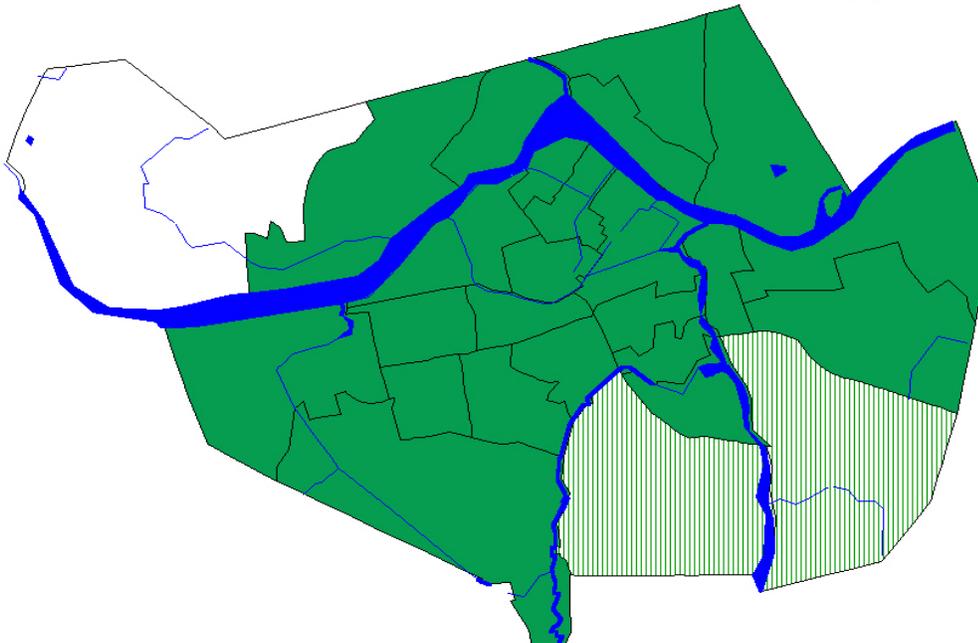
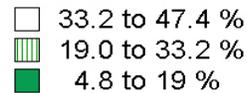
Lead in paint was banned in 1978, so housing constructed after that date can be guaranteed to be lead free. Using 2000 US census data for Lowell, you can see that in some census tracts in Lowell less than 5% of the housing can be guaranteed lead free. Overall, the city has *only* 14.7% of its housing that is known to be lead free. An alternate way of considering this information is that any child living in Lowell has an 85.3% chance of being housed in a lead contaminated home, potentially ingesting it via paint chips, or inhaling it as lead dust. Due to the reduction in lead paint use in the 1970’s, we can hope that much of the housing build in that decade (1970-1980) is lead free. But we cannot guarantee it.

As you can see below, adjacent towns, such as Tewksbury, Tyngsboro, Dracut and Chelmsford have had more new construction than Lowell, and have a much greater proportion of homes that are guaranteed lead free (constructed after 1980).



% housing built after 1980

(2000 US Census)



Lead paint in housing is a factor of the age of the housing more than the economic status of its residents. Even the richest areas of Lowell have significant lead problems in homes.

Since the presence of lead dust is related to upkeep and condition of the paint in homes, whether housing is owner occupied may influence the likelihood that lead poisoning in children actually occurs.

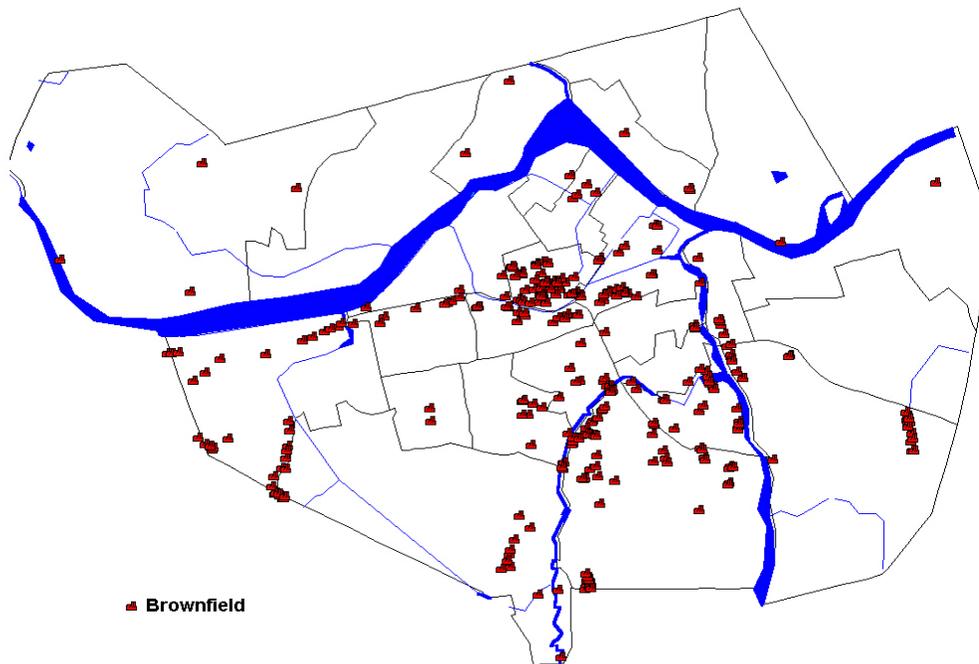
Whether one rents or owns is often related to income and age. Many of us who now are homeowners passed through the stage of renting when younger. Unfortunately, that may put more children at risk as younger people often have young and growing children in the home.

Take home point: Environmental lead is a fact of life in Lowell. We need to do all we can to reduce the exposure of children under the age of 6 to this hazard, and awareness of the danger is the first step towards resolution.

Brownfields: Never heard of Brownfields? You are not alone, but this term is very important to an old industrial town like Lowell. So, what are brownfields? The Environmental Protection Agency (EPA) website defines brownfields: (<http://www.epa.gov/region01/brownfields/index.html>)

"Brownfields: Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

Since Lowell has a long industrial past, it has many brownfield sites within its boundaries, as you can see on the following map.



There can be reluctance by investors and developers to develop these sites because greenfield (previously undeveloped) sites are far less complicated. However, there are many advantages to the community when brownfield sites are recovered and rejuvenated. Abandoned brownfields are bad for the image of the entire city as well as for the neighborhood they are in. When sites are recovered they often bring jobs and/or housing to the areas in which they are located, which then can stimulate more growth for the economy of the city.

When the city, the state and businesses work together with the community, brownfield recovery and economic revitalization can go hand in hand, creating jobs, reusing facilities that would otherwise be abandoned, and creating positive motion toward economic stability and long term prosperity. In section 4, "Who can do what?", I provide examples in the Northeast where cooperation, communication and shared vision among a community has brought about long term benefits to communities in the Northeast U.S.

Lowell, like many northeastern cities, is running out of greenfield space. The EPA is conducting a national brownfield redevelopment initiative to support and encourage brownfield reclamation efforts. For more information on brownfields, please visit their website at <http://www.epa.gov/region01/brownfields/basics.htm>

The possible release of environmental hazards that can become airborne during demolition work is another consideration (but not roadblock), for rehabilitating brownfields. Specifically, attention must be paid to lead dust, asbestos, allergens and mold produced by the renewal efforts affecting the outdoor air quality, and being carried indoors and concentrated indoors by neighboring residents. Other health related pests, such as rodents and cockroaches, can create demolition related environmental hazards. These are not insurmountable problems, but an awareness by contractors and site managers, as well as informing local residents of what they can do to protect themselves, are very important pieces of brownfield recovery. For further information, consider visiting www.niehs.nih.gov/translat/cbpr/proj2001.htm then clicking on the name Farfel.

Take home point: Recovery of our physical space to a more hospitable and healthy environment is up to us all, in myriads of daily individual decisions, being aware of and responsive to past, but taking steps towards changes that are healthier for all.

Indoor Air quality: The Environmental Protection Agency (EPA) considers poor indoor air quality a public health issue. Americans spend up to 90% of their time indoors, and in the northeast the harsh weather often forces us to be indoors much of the time. Air pollutants can often be much more concentrated in indoor air and can be higher than outdoor levels of pollution. As a city, Lowell probably experiences poorer outdoor air quality than the surrounding communities because of the higher traffic volume and fewer trees. That implies that the indoor air quality is even worse, since indoor pollutants can be 2 to 5 times higher than outdoor levels.

Major contributors to poor indoor air quality:

- **Smoking:** This is probably the simplest factor to change to make a home healthier. The smoker is choosing to smoke, but those around him or her are subjected to secondhand smoke: smoke that is exhaled and the sidestream smoke released at the end of the pipe, cigar or cigarette. Children of smokers have increased risks of lower respiratory tract infections, ear infections, middle ear fluid buildup: decreased lung function and more severe and frequent asthma episodes.

Take home point: It's hard for smokers to quit, but encouragement to protect their children from smoke should be promoted as a viable alternative to quitting completely.

- **Moisture:** Excess moisture has the potential to create all sorts of health problems in the home, especially in the context of encouraging asthma triggers and other allergic reactions. Excess moisture can be a chronic or sporadic problem. Moisture problems can arise from inadequate ventilation, plumbing leaks, leaky basements, floods, or just humid summer air or indoor condensation on windows in winter. Moisture can contribute to peeling and flaking paint, so if the paint contains lead, yet another hazard is produced. Ideal indoor humidity is between 30% and 50%. If ambient moisture is higher, it should be dehumidified if possible.

Moisture encourages the growth of molds, which grow on damp materials. Toxic molds can be present that have the potential to increase human mortality. Cockroaches and dust mites thrive in higher moisture, and they are considered to constitute asthma triggers.

If you have left a damp load of laundry in the washer overnight, you've probably smelled the beginnings of mold or mildew on the clothing in the morning when you tossed them into the dryer. Imagine what damp plaster or wall board is like after only a short time of staying damp! A simple water leak or open window in a rainstorm has the potential to create long term problems.

Take home point: Controlling moisture in the home is generally not a costly solution. Awareness of the problem is the first step, and simple changes can make a huge difference in reducing moisture levels in a home.

- **Pesticides:** None of us likes insects in our homes, and sometimes we use pesticides to eradicate them. Unfortunately, many pesticides are harmful to humans as well as the vermin that annoy us. Pesticides used outdoors may be tracked in on shoes or clothing or even on the coats of household pets, endangering them as well. Pesticides also can have a deleterious effect on the environment over the long term, as we've known for 30 years with the problems resulting from DDT and its adverse effects up the food chain harming our butterflies and birds.

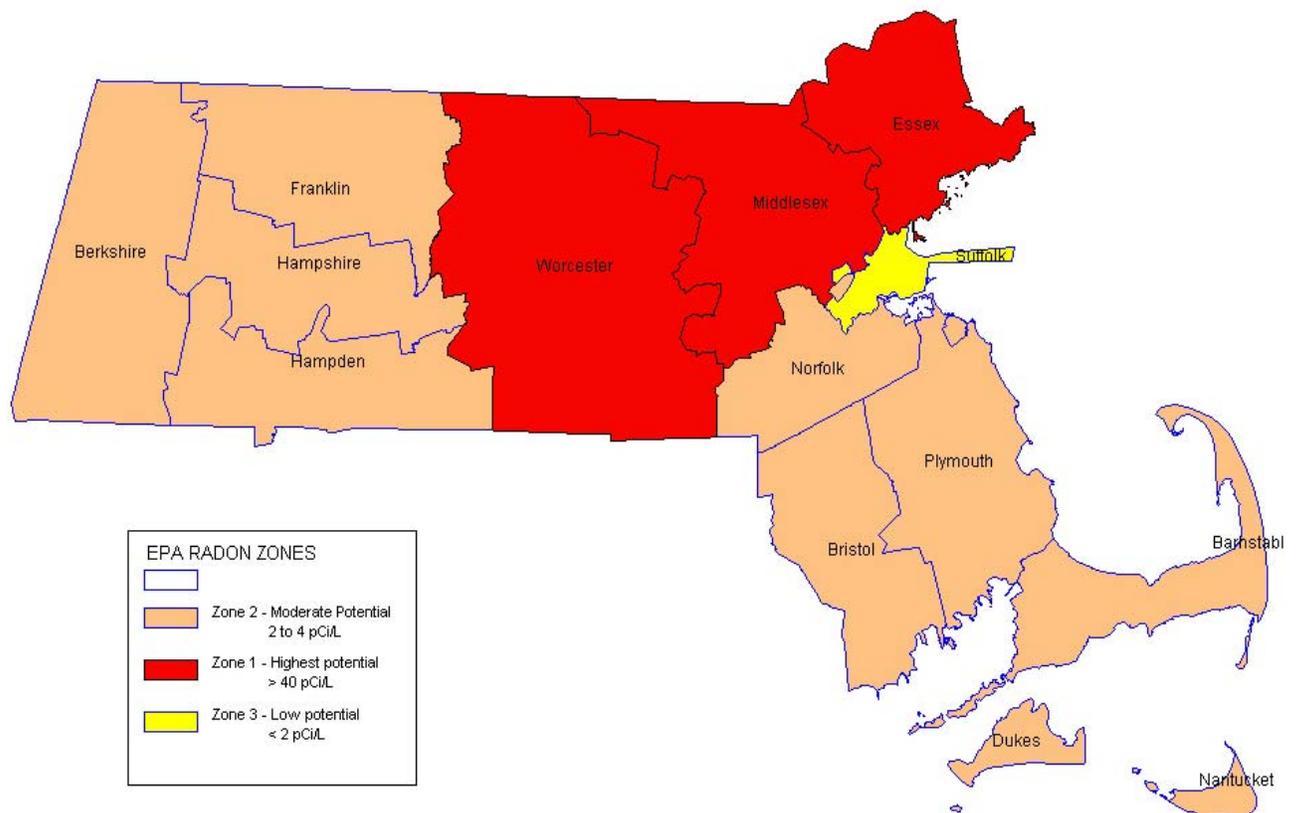
Pesticides can harm people as well as rodents and insects, and can contaminate drinking water supplies. Pesticides have been implicated in human disorders such as birth defects, cancer, Parkinson's disease, infertility, and immune and neurological problems. Interestingly, there are many natural chemicals that we can use to keep insects out of our homes, and tapping into resources that promote organic lawn care and integrated pest management are beneficial to your indoor air quality. (see list of resources, section 8) Long before we developed all these chemicals, humans still hated vermin and developed natural ways to control them, such as traps and herbs that deter insects.

This summer the ants have stayed out of my kitchen for the first time in 21 years. Why? Because this year I used my mother's method of ant control, crumpled up bay leaves, near the window that they have historically entered. Yes, it does not look quite as neat as the chemical treatments. But I am honestly amazed at how effective it is. More effective than the years worth of ant traps, sprays and exterminators' visits, and a great deal less costly, too!

Take home point: Consider using the least toxic product available for your situation. Read the labels and see if you can find an alternative that does not harm the environment, your pets or people.

- **Radon:** Radon is a naturally occurring substance, present in outdoor levels at about 0.4 pCi/L. For indoor air, less than 2 pCi/L is considered low risk. Exposure to higher levels of radon contribute to the likelihood of contracting lung cancer. Smokers exposed to radon have significantly greater risk than nonsmokers of developing lung cancer, approximately a 15 fold increase.

The northern United States is especially prone to problems with radon gas. The Environmental Protection Agency has developed a map that plots radon potential by county throughout the United States. Much of Massachusetts is classified by the EPA as being in Zone 1, with radon measures greater than 4pCi/L. Unfortunately, we who live in the Merrimack Valley are in Zone 1, the highest risk for adverse affects due to radon gas in our water or our indoor air.



- **Cleaning products and other household pollutants:** Cleaning products, air fresheners, paint and paint strippers and even dry cleaned clothing are just a few sources that may increase the level of organic pollutants in the indoor environment. These can be irritating to the lungs and

provoke asthma attacks in some people. Unlike many people who have a multitude of asthma triggers, my own experience with asthma is solely with air fresheners and perfumes. I have had to leave homes if they have been used. Why this when I have multiple pets and a dusty home? My only supposition is that my mother used them daily when I was a child, and over the long term my system reacted adversely.

Natural alternatives to most cleaning products exist; they simply may not be sold at your supermarket or local Wal-mart, ready made and on the shelves. These are less irritating to our human systems and the natural environment. They are neither complicated nor expensive to make, and are highly effective. Even household products such as drain cleaners, which tend to be very caustic, can be replaced by vinegar and baking soda in your pipes. I'd not have believed it but I've tried it and it works as effectively as any chemical product I've ever purchased to clear a drain.

Take home point: Read labels and use the least toxic products for any chore. When possible, use the products outside the home or open windows. Make sure members of your community know which products can potentially hurt them or their families.

- **Inadequate Ventilation:** A key component to better indoor air quality is increased ventilation in the home. Frequent replacement with outside air will reduce moisture and any chemical contamination that may be present in the home. Historically, our homes in New England have been drafty, and that was a natural form of ventilation. However, with our increased energy consumption concerns, we've insulated ourselves pretty tightly. This has increased the potential for indoor air pollution, whether from particles from our furnaces or moisture from our clothes dryers.

Exhaust fans should be used when cooking or bathing, and they need to be vented to the outside. An open window can allow substantial ventilation if fans are not available. In the summer, when our outdoor air quality is a problem, the use of air conditioners can improve indoor air quality, but filters need to be kept clean or replaced regularly to keep the air quality high. We all replace oil filters when our oil in our cars need changing; our lungs deserve no less attention to detail.

New construction, with its greater insulation and reduced air-flow, must be carefully built with ventilation in mind to ensure the best air quality. With proper planning, ventilation can be maximized without excess energy use, and coupled with safer indoor practices, such as using fewer toxic chemicals in the home and yard, air quality can be improved.

Take home point: Improving indoor air quality is good for human health and for the environment; awareness is the key to that improvement. With proper ventilation, cleaning supplies, and moisture control, indoor air quality can be dramatically improved.

Next Steps:

- Groups can provide well written materials or seminars to inform people and groups of the hazards of indoor air pollution and provide simple, inexpensive steps to improve air quality. Use community group meetings to encourage parents to smoke outside for their children's health. Provide written materials regarding indoor air quality at community centers, community meetings, health centers, and city offices. Make the information available to more people by translating them into the languages spoken in that community.
- Individuals and groups can develop and continue collaborative projects to remediate current environmental hazards, and move toward the future, responsibly leaving a legacy of environmental awareness. Action can be done at personal levels, taught in the public schools, and can also be a part of any long term planning of community groups and the leadership of the city of Lowell.

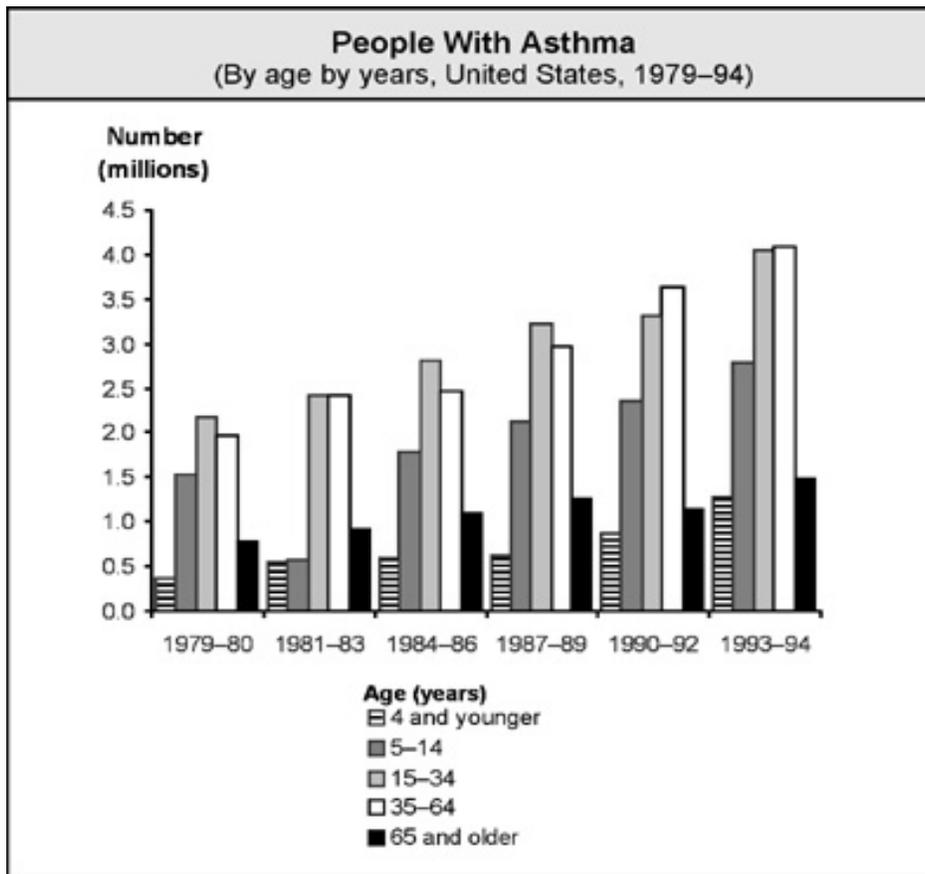
- Information about lead, lead abatement training and financing available for lead abatement can be more widely disseminated and encouraged. Information regarding the danger of lead can be produced in additional languages, and incorporated into home visits of various kinds. Groups could sponsor lead awareness events, which might incorporate brownfield awareness and cleaning product dangers, as well as safety concerns such as overloaded circuits.

3. What does asthma have to do with housing issues? What is the cost, personal and financial with asthma? How do we know asthma is on the increase? Can healthier homes reduce asthma incidence or severity? What is the state of asthma in Lowell or the Merrimack Valley?

What is asthma? Asthma is a chronic inflammatory lung disease in which the lungs tighten and constrict instead of expanding and contracting normally. This causes symptoms of cough, wheezing, breathlessness, and tightness in the chest. Asthmatic lungs are overly reactive to the environmental ‘triggers’ that provoke attacks. There seems to be a genetic component to asthma, as most sufferers have close relatives with asthma. But the increasing prevalence of asthma tells us that other factors must be a significant part of the picture.

When I was a child in the 1960’s, asthma was a rare and life-threatening diagnosis, and considered to be a psychosomatic illness. A friend of the family was diagnosed with asthma in the early 60’s, and it was something spoken of with shame and fear. Asthma was also thought to be something one often outgrew with age. Science now has shown us that both of these concepts were wrong. But we are still working on solving the puzzle of the cause of asthma. International and American studies point toward air quality issues as a significant factor in the development of asthma.

We’ve come a long way since the 60’s in treating and destigmatizing the condition of asthma, but we still don’t know a great deal about its cause. Until we do, it means we are all at risk for developing asthma, because it can appear at any stage of life. What we do know is that asthma prevalence more than doubled in the 14 year period of 1979-80 to 1993-94. What will the number look like in 2008? Who will be affected?



As the number of people afflicted with asthma has risen, we have come to realize that asthma is more complicated than we thought. Asthma cuts across gender, age, and socioeconomic strata. Even if no one in your household has asthma, asthma affects you because of its impact on our health care systems, including our emergency rooms.

We do know what provokes asthma attacks in susceptible people. Environmental triggers have been identified, and when these triggers are eliminated or reduced, the asthma sufferers can breathe more easily. Many of these triggers are present in the home or other indoor settings and attacks can be reduced in number and severity if the

Source: CDC, NCHS. Surveillance for Asthma—United States, 1960-1995. *Morbidity and Mortality Weekly Report* 47(SS-1);1-28, 1998.

indoor environment is improved.

Environmental triggers include pet dander, cockroaches, dust mites, mold and second hand smoke. Other, less controllable triggers include outdoor air pollution, respiratory infections, pollens, exercise and cold air.

Until recently, asthma data in the Merrimack Valley has been disjointed and it has been difficult to ascertain the extent and the severity of asthma locally. However, an exciting study is just winding down, whose results are to be published in October of 2003 by Robert Knorr, the deputy director for Environmental Epidemiology for the Massachusetts Department of Public Health.

In this study, designed to measure respiratory disease in the Merrimack Valley, Dr. Knorr and his team used school health records to acquire pediatric asthma surveillance data in the communities of Andover, Haverhill, Lawrence, Methuen, and North Andover. The same data were obtained from demographically comparable communities within Massachusetts with better outdoor air quality. This report is expected in October 2003 and will give some strong and scientifically rigorous data on what the relationship is between pediatric asthma and air quality.

Building on this work, Dr. Knorr's group is currently using the survey tools from this nearly completed project funded by the CDC (Center for Disease Control). Its goal is to have all public and private schools in the Commonwealth reporting asthma data in the same way this study did. The data would be reported by school nurses, once a year, in a short one page form. The first project had 100% compliance from the communities studied. The CDC study is in its first year with 80% compliance by the 700 schools who have been asked to participate; by the third and final year Dr. Knorr hopes for 100% compliance from the 3000+ schools in the state.

One would hope that this project will become an integral part of disease surveillance in the state and would be replicated by others states nationwide. Lowell is one of the communities whose asthma data has been requested in this first year of the CDC project.

In section 7, you will see what building affordable housing with health issues in mind has done to reduce asthma in Dorchester, and could be applicable to reducing the severity of asthma here in Lowell. For now, it is sufficient to summarize with this:

“Interviews with new residents report good health results as well: symptoms were noticeably reduced in 8 out of 18 children with asthma problems.

(http://www.hickoryconsortium.org/erie_ellington.htm)

Take home points: Asthma can affect anyone, at any stage of life. Asthma is on the rise nationally. Air quality may play a role in the increases in asthma severity and incidence. Indoor air quality is directly related to outdoor air quality, and asthma triggers can be in higher concentrations inside the home. “Breathing easy” should be a quality of life for us all.

Next Steps: Encourage Lowell schools and school nurses to participate in the current study. Encourage building with health issues in mind. Encourage builders to become aware of healthy homes issues. Provide incentives for healthier residential and industrial construction techniques. Consider making part of the downtown area solely a ‘pedestrian way’, thereby keeping auto emissions from concentrating there.

4. Who can do what? What is already being done in Lowell and locally? What can we learn from others' experiences?

Who can do something to change the landscape of unhealthy housing? Who has the 'magic wand' that when waved, works to create 'healthily ever after'? It's easy to wish for a magic wand, but we are not in a fairy tale. 'Happily Ever After' only happens when we make it happen. As with the housing situation overall, no one individual and no group can do everything. But each of us can contribute something.

Individuals: Clearly, what one can do as an individual depends on one's resources. Resources may include finances, knowledge and personal contacts. But even with few material resources, you can do a great deal. I'd like to share with you what one woman in Lowell is doing with minimal resources. Our 'local hero' is a middle-aged former cleaning lady, divorced with only a high school education. Currently disabled, she has spent the major part of her adult life as a single parent of two. Cleaning ladies do not have a high status occupation, and do not often have the opportunity to make 'connections'. Their financial resources are minimal. Generally they don't run for public office or make headlines. Yet Rose is making a difference.

For 10 to 15 years Rose supported herself and her children by cleaning vacated apartments prior to new residents' arrival. This required her to be something of a perfectionist, because tenants often do not leave sparkling clean apartments behind, but new tenants expect to move into a 'like new' apartment. Cleaning burned, caked-on ovens, moldy bathrooms and removing smoke residue on apartment walls was a physical task, and she was a perfectionist. Exposure to commercially available oven cleaners and tile cleaners was particularly hard on her long term health. Eight hours a day, at least 5 days a week, Rose cleaned. The owners required their workers to clean a minimum of 3 apartments a day; sometimes she cleaned as many as 8 apartments per day.

At the time, Rose realized the cleaning fumes were bothering her physically, but she accepted it as part of the job. Once, accidentally mixing cleaners in a bathroom, Rose sustained a lung burn and had to be treated at the Emergency Room of her local hospital. Recovery from that took almost a year, but she had to work while recovering, because bills needed paying.

Recently with the help of her son, a student at UMass, Rose realized she could no longer use toxic cleaners, even in her own home. But she could not be comfortable in a dirty house. What could she do? Rose found alternatives in a book called 'Clean House Clean Planet' by Karen Logan. She used Ms. Logan's recipes to create her own cleansers which would work effectively without making her ill. She used simple household ingredients like white vinegar and baking soda, borax, distilled water and flavorings for scent.

But she did not stop with her own safety. Being disabled, but still wanting to share her new awareness with others, she began making kits of the cleaning products and giving them as presents. Getting married? It's your birthday? Christmas? Rose would give you a cleaning kit.

Recently, Rose made a presentation at a conference in Lowell, to share her healthier cleaning products with others interested in issues of Healthy Homes. If Rose, with her limitations, can do her part for health and this planet, what can you do?

(Rose's "recipes" can be obtained by contacting spiffymommy@juno.com or by referring to Karen Logan's book, Clean House Clean Planet. Alternate cleaning product recipes can also be found at <http://www.healthhouse.org/tipsheets/cleaning.asp> .)

Groups: What can groups do that individuals alone cannot? Churches, community groups, health departments, medical providers and other groups have a greater network than any individual does. Groups have the ability to bring larger numbers of people together for a common purpose, and

provide education and services to individuals. Groups can be wonderful for workshops and dissemination of information that might otherwise languish on shelves, unread. Groups have the power to insist that written materials be produced in multiple languages, and sometimes to translate those materials themselves. Groups can sponsor festivals and other events that can reach large numbers of people at one time. Groups can support and train others in healthier behaviors within in the context of their cultural norms. Here are some local examples of what groups have developed to address some of the healthy homes issues.

Citizens for a Better Acre: Here in Lowell, CBA is a Community Development Corporation (CDC) that works in many ways to improve the health of the city of Lowell as a component of the many things they do. Recently, the city of Lowell decided to build a new school on a brownfield site. In many ways, this was very positive decision for the city to make. Unfortunately, minimal clean up was planned for the site prior to construction. The local residents and the CBA have worked hard to persuade the city and the site contractors to do more. With state money acquired for the cleanup, CBA is effectively striving to implement higher standards for the site so that the children who will spend many hours a day there will be protected from the residual brownfield chemicals present.

These standards currently involve the removal of soil 3 feet below the surface over the whole site, and where the soil is most contaminated, down to 6 feet. Also it's insisted the contractors adhere to the requirement to hose the trucks down as they leave the site, since the dust from the soil has the potential to become airborne and become a hazard to those in proximity to the site and everyone else along the truck's route to disposal of the contaminated soil. There are air monitors on the site that are intended to provide air quality data as the work proceeds. This data is especially valuable as subsequent projects move ahead in brownfield areas.

Another focus of CBA is being a developer affordable housing for the city. They also have acquired some commercial property, but that was in direct relationship to serve housing needs and other non-profit groups that serve the citizens of the city. While many of the units are rentals, there is also a focus on developing home ownership for those who would otherwise be unable to meet the requirements to buy in Greater Lowell, of one of the most expensive real estate areas in the country.

CBA incorporates healthier, more sustainable housing by not using carpet glue or off gassing insulation in its homes, and by complying with Energy Star guidelines for construction. They also promote healthier housing for the community in two additional ways. In their offices, visitors find information that informs on lead paint problems and issues in the community. One of these is through informing about the Lead Paint Abatement Program in the city. The other program they have developed serves by providing job training in environmental remediation and monitoring. By training workers in lead abatement, hazardous waste handling, asbestos abatement, environmental sampling and industrial hygiene, they both provide skills for the people of Lowell and workers for the field of environmental cleanup. It should be noted that the CBA is not the sole partner in this program, but is in partnership with the City of Lowell, the EPA, the Lowell Adult Education Center, the Cambodian Mutual Assistance Association, Laborers-AGC, and the University of Massachusetts Lowell.

Nashua Public Health Department: Lead paint is present in other communities locally, and they are doing some interesting things to inform their populations about the hazard. The Nashua Public Health Department has received a federal grant that is directed at informing their Hispanic citizens of the dangers of lead for children under age 6 and how they might protect their children. The oldest sections of Nashua are the focus of the grant; the program planners targeted two census tracts that have the greatest number of children and the highest proportion of Hispanic residents.

One Saturday morning I joined them as their community liaison, Maria, had recruited young Hispanic parents in the weeks before the meeting. The meeting was conducted in Spanish. Maria prepared traditional Spanish breakfast food, then she and a nurse showed a English language video

on the dangers of lead poisoning . This could have been a real problem, but the video was stopped every minute or two for Maria to translate what had been said in the video.

Interestingly, the video being translated as it went along provided a format for questions from the audience, and was much more interactive than most video presentations. Since the audience, mostly young women, could ask questions as they thought of them, they interacted with each other as well as Maria. When Maria did not know the answer to a medical particular, the public health nurse was there to provide more detailed medical answers and run the video. Videos about lead poisoning are available in Spanish; the health department simply hadn't had access to one prior to the meeting. But one valuable piece of the dynamic that Saturday morning was that no one could tune out Maria; I find it easy to lose focus during a video presentation. The community dynamic that morning was involved, attentive, and positive, while learning about environmental lead hazards that put their children at risk of danger.

One size doesn't fit all in what a group can do to educate about healthier homes and move towards more of them. The cited examples are what others locally are doing. What is your group good at? What can it do to make life healthier for the community? How can your group act in ways that promote health, along with trying to fix lives already disabled?

City, State, Federal agencies: What can they uniquely do? Government bodies at various levels have the capacity to stifle change or to encourage growth and development. City and town boards can deny or encourage building permits, increase or decrease housing density, and assist in increasing public awareness of home health issues through the funding of their health department. Decisions are made daily, and especially at budget time, that affect the citizens of their communities, young and old, rich and poor. There are sometimes conflicting visions between government employees and their leadership. Leadership may be dynamic and visionary, or it can be mired in 'business as usual'.

In general, government boards and agencies are filled with good people who want to do what is best for their community. The difficulty sometimes is agreeing on what is the best course to pursue for all concerned, and what is best over time. Agreement can be made that we all want the best and healthiest environments that can be had for our community. The difficulties are two fold; Do we see the same 'best'? And do we have the money to invest now and will to achieve the goal?

Lowell: One example of how the city of Lowell is currently (since 1998) working toward healthier homes is its Lead Paint Abatement program. Working in conjunction with other agencies, the city offers investors and home owners low interest and deferred loans toward lead paint abatement. Owners occupants must meet income guidelines, but can receive loans with an interest rate of 0% and a loan term of 5-20 years. Investors can obtain 3% interest rates, but can borrow less per unit, and have a maximum 7 year term. For those who would otherwise be unable to de-lead their homes, this program can turn a dangerous home into a safer environment. Additional details this program can be found on the city web site at:

<http://web.ci.lowell.ma.us/cityhall/depart/dpd/housingpages/leadpaintpages/leadpaintpage.html>

In addition to this program, the city works in partnership with The Institute for Environmental Education to provide training for those who are interested in learning deleading skills. This training is free for those who meet certain income guidelines. More information on the training program can be found at www.ieetrains.com, and some of the trainings are given in Spanish as well as English.

What are other cities doing? Many cities are faced with the same problems as Lowell, especially in the Northeast. In considering the problems faced with cities with significant brownfields, it may be interesting and helpful to see how other cities have responded to their brownfield sites. I will quote directly from <http://www.nemw.org/lessons.htm>

“Fallon/St. Vincent Medical City — Worcester, Massachusetts

In 1992, two of the largest health care providers in Worcester merged with the hope of building a \$200-million integrated health facility in an urban setting. Eager to attract the hospital, city officials immediately created an institution to oversee the endeavor — the Worcester Redevelopment Authority — and began targeting properties within a 24-acre blighted area for acquisition. By 1996, all structures had been demolished and the graded property was conveyed to the purchaser for \$6.4 million with a Covenant-Not-to-Sue. Total public expenditures on the project were \$42 million, split between the state and the city. City officials expect to see a huge return on their investment. Once operational, the facility will provide nearly 3,000 new jobs and will generate \$875 million in total direct economic impacts within the first ten years (\$1.9 billion in indirect economic impacts). This case study illustrates how strong public/private cooperation can save time and produce immense cost-savings. It also demonstrates the importance of establishing an effective institutional framework — in this case, the Worcester Redevelopment Authority — to oversee brownfield redevelopment activities.”

Further encouraging and exciting examples are found on this website, and the clear theme of them all is the willingness of all government agencies, federal to local, to work with each other as well as with businesses and community groups to find (and fund) a path that solves several problems at the same time.

Take home point: To solve community problems, including healthy housing issues, we must all play a part. Each of us can do something; some of us can do more than others. The way we can bring constructive change faster and with greater efficiency is to work together. This pools diverse information and perspectives, and allows less myopia in our visioning. And with more focused, clearer vision, our path to improvement becomes less a dream and more of a reality.

Next steps: Consider how your group could seek input from other community members that it has not considered contacting in the past. Then listen respectfully to their input. Develop a relationship with members of different groups, because there is generally something they know that you don't and that can help you see the situation in an interesting light.

5. What are individuals doing towards contributing to the unhealthiness of their homes? How can that be changed for the better? What motivation is there to change? (My family does not have asthma, lead poisoning, or other 'healthy homes' issues. Why should I make any changes?)

There are a few simple changes we can all make to minimize our family's exposure to an unhealthy indoor environment. Since we don't know exactly what environmental stressors provoke asthma, it makes sense to provide a home environment that is as healthy as possible, even if asthma has not been diagnosed in your household.

Smoking: The first place to start is with second hand smoke. It is difficult to stop smoking, once you've begun. But even if the adults can't quit, they can keep smoke away from other household members. For most people that means smoking outdoors. It is easy to consider that an imposition, but perhaps it is more accurate to think of it as a protection for other family members. Non-smokers can insist that any guests who smoke do so outdoors.

Pesticides: We all like our homes bug free. It doesn't matter who you are or where you live, bugs are intruders in our homes. There is nothing wrong with that perspective, especially since some bugs, like cockroaches, can act as asthma triggers. Healthy homes don't have insects. But exterminating insects, indoors or out, can increase the concentration of pesticide in a home. I live in a very rural area, and our local ants think they belong here, and we're the interlopers. I have an exterminator who uses marigold extract for killing household pests. This is better than chemical pesticides that don't degrade, but still is a pesticide. One must keep children off the floor and away from areas that have been treated for some time after it's applied. Sometimes exterminators have specific reproduction related chemicals that interfere in a specific insect's life cycle, and therefore have negligible effect on animals and humans.

Another troublesome source of household pesticides are the lawn products used to make our lawns nicer. The problem is that these often get tracked into the home, by pets and household members, where they can pollute the indoor environment. This is a special problem for very young children and pets as they are so much closer to the ground.

Household cleaners: Most of us make the assumption that if a household product is sold at the local supermarket, it must be safe. But a quick review of the cautions on the back on many products should make us realize otherwise. Unfortunately, not all of residents in Lowell read English with fluency, and are therefore their family's health could be jeopardized by their use of many of the cleaning products on the market. Others of us who are over 35 sometimes fail to wear reading glasses and miss the warnings on the labels. As you read in Section 4, effective cleaners can be made from some very gentle products without the toxic fumes or irritants.

I was skeptical at first, when I set aside my drain cleaner to use vinegar, baking soda and boiling water to clear my clogged kitchen drain. I couldn't imagine that they could be effective. Yet, when I followed the directions, they were highly effective and I did not need to worry that my son would have to be out of the kitchen to keep him safe.

My choice has been to phase in the substitute safer cleaners as I need them. I do not know if they will all work as well, but I am quite certain that I and my family reducing our exposure to the harmful chemicals so frequent in supermarket products.

Even if one chooses to not use more benign products, one can improve the indoor environment by always adequately ventilating the work area, by opening a window and using a fan.

Other: Some workers unintentionally bring home chemicals on their clothing, hair, skin or shoes that contribute to indoor air pollution in their homes. Hobbies may include chemicals that contaminate

the home, and remodeling without caution can produce lead and other toxic dust that is hazardous to indoor air quality. For those with allergies or asthma, even household dust can create a significant problem, harboring dust mites which may trigger asthma attacks.

Take home points: Each of us can improve our indoor air quality by increasing our awareness of the built environment and by making minor changes in lifestyle. Churches, community groups, health centers and the city have the capacity to distribute information in culturally appropriate ways and could have a significant influence on lifestyle choices, such as indoor smoking around children, especially.

Next steps: Groups can provide information for their members that increase awareness of environmental hazards present in common, and presumed harmless, substances we encounter daily. A city wide health and environmental fair might not seem as dynamic as the Folk Festival, but could potentially reach, entertain, and teach a significant number of people. A coordinated campaign directed to smoking parents to care enough to smoke outdoors could be waged.

6. Is new construction always healthy construction? What external factors are impediments towards healthy homes and sustainability in new construction?

New construction will be healthy in some ways, and not necessarily healthy in other ways. New construction will not contain lead paint. New construction will generally not raise moisture issues, although it is critical during the construction process to not trap moisture in the walls, or create an environment that allows moisture to condense in the walls over time. New construction must be properly ventilated to insure that moisture problems do not arise, especially in the tight (and energy saving) houses that can now be built. Smoking in a new home will be as unhealthy as in an older one.

New homes have new materials in them. That sounds obvious, but new materials, from sheet rock to carpet to vinyl flooring and siding all have the potential to “off gas”. That means that the materials, such as formaldehyde, used in the production of these useful home products, can be released into the air in the new home, and create unhealthy indoor air quality for its occupants. Vinyl siding off-gasses into the outdoor environment in a similar way. Wood and other natural products do not off gas, but are much higher maintenance and initial cost of both the materials and insulation. The natural products generally have a longer useable life span, and when they eventually arrive at the landfill, break down easily.

I am currently building a new home in the Merrimack Valley. My fiancé and I are faced with a myriad of choices. We can choose between vinyl or tile or wood or carpeted floors. Vinyl and carpet both off gas. Linoleum, the old-fashioned kind, does not. Marmoleum™ is a floorcovering we are considering. It is made from the natural ingredients of linseed oil, wood flour, rosins, pigments and jute. More information on this product is available at www.themarmoleumstore.com. Tile and wood do not off-gas. Natural woolen carpet exists, but its cost is significantly higher in cost than the kind you find at your local carpet store. Generally, producing carpeting requires oil, a non-renewable energy source. Tile and hardwood are wonderful looking, and significantly more work to maintain. They are also significantly more expensive. How do we decide? With our pocketbook or our desire a healthy home? With our environmental outlook or our desire for easy maintenance?

We are faced with siding choices that vary from vinyl to cedar to a cementous siding that is natural and durable, but requires specialized contractors to install. Vinyl siding, the simplest to upkeep, and we'd never have to paint, comes with many environmental costs. It uses up oil, a non-renewable resource. It is as durable in the local landfill as it is on your house. It does crack though, so it will eventually end up in the landfill, where it will stay for 10,000 years or so. The cementous siding is more attractive than vinyl, but more costly as well, though not as much as cedar. Cedar is renewable and cost is steep and it requires higher maintenance. I do not look forward to painting my cedar house every 10 years for the rest of my life. But at that same landfill, it decomposes nicely and naturally. Do we opt for convenience or choose respect for the planet and our health?

We must decide if we will build with our walls 16 inch on center (the standard) or 24 inch on center, and save a few trees. This construction approach also permits more efficient thermal insulation, as the more wood in a wall, the more it conducts heat out of the home. Will we compromise structural integrity? Our builder tells us this is the standard on the west coast, and our research shows he is correct. But do we trust it?

We have to select windows. Windows are notorious heat loss areas. Even the most insulating windows (lowest emissivity -E) still allow more heat to escape than a comparable wall area. There is a balance to be struck between living in a warm cave with little natural light, and allowing enough natural light to please, but not devastate the utility bills. New homes are typically built with huge windows. The real estate agent with whom my builder is working wants huge window spaces in the homes to be built. That means energy loss, but a more marketable house. What do we choose? How do we choose?

We can select granite countertop, or Formica. The synthetic is far less expensive, and held together by glues and processes that may off gas. It's durable. I've got Formica in my current home, and it's not needed repair or replacement for the 20+ years I've been here. It is not as attractive as granite and is more forgiving towards those of us who aren't impeccable housekeepers. And granite is an upgrade that comes with significant price increases.

We have selected a builder that has a grant to produce homes that incorporate solar photovoltaic (PV) technology into every home in our development. The PV is being developed locally, in Marlboro, and the grant greatly subsidizes the panels to encourage a transference from reliance on fossil fuels to more renewable resources. On those cold but sunny winter days, we could be supplying enough energy back to Massachusetts Electric to negate our electric bill, and even earn a few pennies. But on our dreary days we'll still be buying electricity like everyone else. The grant makes it a reasonable upgrade to add solar panels; otherwise it would be very cost prohibitive to consider. Under the grant, the cost to the buyer, per unit, is \$5,000. The cost without the grant is approximately 5 times that amount.

The technology exists that would allow a home such as ours to be heated with a light bulb. We will not build that "environmentally correct" house though, because the up-front cost is too high. We will use technology that will allow minimal heating costs, with more insulation than is code, and with a tighter envelope, with all cracks sealed more than is required by code. We can select building materials that are all natural, and will keep us healthier by not off-gassing. Doing so could increase our building costs substantially. One factor in new building is that appropriate ventilation should be a significant positive factor. The tighter the home, the more crucial ventilation is to creating a healthy home.

What we've learned is that the more we rely on existing and traditional synthetic building materials, the kind that many builders include in their base price, the more likely we will live in an unhealthy home. Another factor in the synthetic building materials is that they are created in a way that is not environmentally or worker friendly. Those substances that off gas in the home are used in creation of the product, so the workers can be exposed to significant amounts of the substances. In addition, they often produce waste products that are not environmentally beneficial, otherwise known as hazardous wastes.

The other thing that has been reinforced in this building process is that there are reasons humans created all these synthetic building materials. They're durable, inexpensive, provide jobs, and are generally easier to maintain. The problem that they are not good for people or the environment is an unintended consequence.

One encouraging aspect of the process and project is that even 10 years ago, it would have been difficult to find the supplies and the builder to proceed with the dream of houses that are almost sustainable. And as more builders and contractors gain experience in using the more natural building materials, the easier it should become to find them. The grant that will enable the incorporation of solar PV panels in its construction was not available until recently. I believe we are at a fork in the road. One path leads to sudden loss of jobs and economic crisis when oil supplies truly run out. The other path leads to a gradual, but intentional, process of diminishing our reliance on oil, foreign or domestic. If we keep on doing 'business as usual', the path for our children and grandchildren could be traumatic. If we begin small (our subdivision has 5 homes proposed), perhaps we can transform our vision of 'the way things are' to "the way things could be".

Those involved in building processes, individuals, groups, and especially city agencies and boards, might consider reviewing <http://www.energybuilder.com/greenhome-basics.htm>, a thoughtful list of basics to consider when building. For the city to encourage new construction to be built with these basics in mind could bring significant benefit to the city of Lowell. A carrot or/and stick approach,

in the form of reduced fees, speedier board hearings, or variances granted on the basis of greater 'greenness' would go a long way to encouraging healthier, greener homes for the city of Lowell.

In section 7, you will encounter an example of a community group having the kind of vision necessary to create healthy, green, and affordable housing that quantifies the utility savings possible. What if all new housing were built with the objective of being healthy and green, both in the city and the suburbs? Where will we be in 30 years if we choose green and healthy? Where will we be if we do not?

Take home point: To build healthier new homes, one must be aware of the potential air quality issues in new buildings. Choices can be informed by factors besides expense. Some choices are actually going to be at no cost differential, even over the short term.

Next Steps: Find ways of making builders, contractors, tradesmen and others involved in construction aware that the choices they make have future consequences. Encourage by providing information, training, and encouragement to investigate alternate ways of doing 'business as usual'.
<http://www.affordablecomfort.org/html/acNE03.html>

7. What is sustainable, healthy housing? What are the long term implications of a healthy homes vision? Is it possible to build affordable, green, healthy housing? It sounds like a pipe dream.

To consider designing and building sustainable or “green” housing evokes visions of wealthy suburbs or corporate offices who can afford such technology. To include ‘affordable’ seems to make it an ‘impossible dream’.

First of all, let's start with a definition of sustainability, courtesy of the state of Oregon.

"Sustainability means using, developing and protecting resources at a rate and in a manner that enables people to meet their current needs and also provides that future generations can meet their own needs

"Sustainability requires simultaneously meeting environmental, economic and community needs."

Using the above, let's define sustainable housing as follows:

"Housing that impacts the environment minimally, produces economic benefits, and meets community needs, without compromising the quality of life for future generations."

Since good health is a community need, healthy housing contributes to sustainability and in general, good environmental policies and health issues go hand in hand. For example, vinyl siding and other building materials that off-gas tend to aggravate human asthma and other respiratory problems. Vinyl siding is made from oil, the ultimate non-renewable resource, and while economically defensible, seems environmentally unwise. Wood as a building material doesn't contribute to a decline in human health, is renewable, and produces economic benefits, so is sustainable. And as long as we can keep planting trees, and recycling paper, we can provide wood for future generations.

So, how can we ‘do it all’ and still afford it? I'd like to tell you about a group that has created ‘green’, healthy, affordable housing in Dorchester, Massachusetts.

Codman Square CDC's Erie Ellington Project

The Erie Ellington Project consists of a 50 unit affordable, environmentally sustainable housing development in Dorchester, Massachusetts. Coordinated by the local CDC, and community vision, this ‘impossible dream’ has been used as housing for more than a year. The CDC owns the project, and rents the units. The units are designed as mostly 3 family homes.

A purpose of a CDC (Community Development Corporation) is to foster community life. But this story begins not with the CDC, but the community members themselves. The community itself initiated the process that resulted in the Erie Ellington Project.

Concerned with the 50% asthma rate in the CDC's service area, the community wanted to do something to change that. The CDC, in turn, contacted Hickory Consortium, a consulting group that works in partnership with the US Department of Energy Building America Program. (for more information about Hickory call 978-287-4578 or visit www.hickoryconsortium.org).

The community provided input into the design of the homes, the green open space that would be created, and the density of the housing. The CDC worked with Hickory Consortium on the health and energy saving concerns.

Some fascinating aspects of the project, in addition to the results, were the unusual nature of the building process. Hickory works in a “collaborative, integrative mode” with its clients, which they refer to as ‘partnering’. This means that at every level, they sought to make sure everyone was ‘on board’ in the process. They had coffee and doughnuts with the workmen at every level of the construction process. Their partnering approach was a formal process that made sure that everyone involved understood each other’s goals and cooperated with them. This was truly a community building effort.

Environmentally, this project sought to

- protect trees and topsoil,
- sited homes to capture passive solar energy
- consolidated driveways to minimize paved surfaces
- located buildings to keep existing shrubs and trees
- avoided ozone depleting chemicals
- chose durable materials and products
- chose low maintenance materials, Ex. 50 year clapboard (hardiplank siding)
- Avoided materials that off-gas
- Used recycled materials
- Minimized waste by using factory build modular building materials
- Used high efficiency lights and appliances
- Installed low E (emissivity) windows
- Installed low flow toilets, aerators, bath faucets, and dishwashers to reduce water and energy use

To respect the residents health, this project

- Used techniques during construction to minimize mold formation during construction by keeping wood dry
- Maintained a ‘tight’ energy efficient focus; installed ventilation systems using computer controlled bathroom exhaust fans
- Used radon resistant concrete slab foundation floors
- Used Combustion systems closed to the indoor environment
- Used zero VOC paints and other finishes were selected to minimize off gassing
- Used linoleum (a natural material), wood flooring, and low VOC carpeting.

What are additional results of the residents’ vision that produced Erie Ellington?

Economically, the energy savings of this project have been significant and positive. To appreciate the financial *advantage* of sustainable building,

“the typical Erie Ellington home used 42% less space heating energy, 27% less domestic hot water heating energy, and 59% less electricity.”

(http://www.hickoryconsortium.org/erie_ellington.htm)

The health advantages are also measurable.

“Interviews with new residents report good health results as well: symptoms were noticeably reduced in 8 out of 18 children with asthma problems.

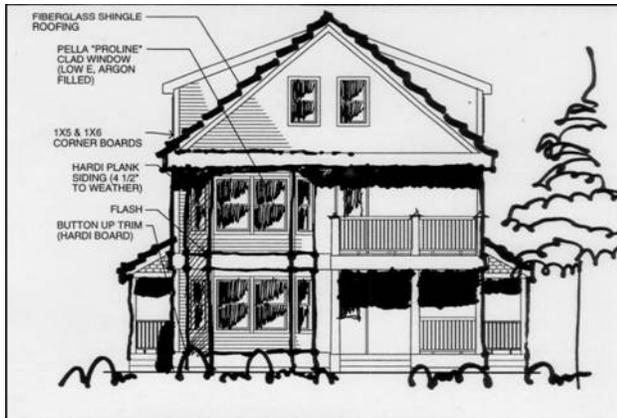
(http://www.hickoryconsortium.org/erie_ellington.htm)

The environmental impact is harder to quantify. We know that less was wasted in its construction than is usual in a project this size. We know that whatever oil would have gone into producing vinyl siding has been conserved. We know that less energy and water usage means more for later generations. We know that the ecology of that Dorchester neighborhood was minimally

affected by the construction. And we hope that the process that worked so well there can be replicated in other cities towards a more sustainable future.

Take home point: With the right motivation and a group effort, minds, methods, and processes can change for the better towards sustainability and good health. Choices can be made to promote human health and be more sustainable, without a hefty price tag.

Next steps: Investigate the possibility of repeating this effort in Lowell, training local contractors in 'green' methods of building, who then would be able to be a local resource for healthier home building.



An Erie-Ellington three family home

8. Where can we find information needed on healthy housing? Who has resources locally to distribute on healthy housing issues?

This is a partial list of the resources and web sites that have publications that can be downloaded or ordered. Clearly, they would also link to additional sites that may answer the specific concerns or questions you encounter. I hope they can help you. For an electronic version of this page, please contact [Judy Swenson@juno.com](mailto:Judy_Swenson@juno.com).

Resources for healthier homes

General risk factors

www.uwex.edu/healthyhome/topics.html
<http://www.uwex.edu/healthyhome/book.html>

www.epa.gov/children

www.epa.gov

U. S. Department of Housing and Urban Development (HUD) <http://www.hud.gov/offices/lead/leadtips.cfm>

Is your house making you sick?

www.healthhouse.org/iaq/pollute.asp

Lead

City of Lowell, Lead abatement program
978-970-4252

<http://web.ci.lowell.ma.us/cityhall/depart/dpd/housingpages/leadpaintpages/leadpaintpage.html>

Lead paint removal training

The institute for Environmental Education

800-823-6239

www.ieetrains.com

Massachusetts Childhood Lead Poisoning Prevention Program

56 Roland Street

Boston, MA 02129

1-800-532-9571

www.state.ma.us/dph/clppp

Brownfields and Brownfield recovery

www.epa.gov/region01/brownfields/basics.htm

www.nemw.org/lessons.htm

www.niehs.nih.gov/translat/cbpr/proj2001.htm#farfel

Indoor Air quality

Healthy Homes Partnership

(a collaboration of USDA and HUD)

<http://www.uwex.edu/healthyhome/pdf/Air.pdf>

Healthy Indoor Air for America's Homes

www.montana.edu/wwwcxair

<http://www.montana.edu/wwwcxair/hazards.htm>

Reference Guide to Indoor Air Pollutants

www.epa.gov/iaq/pubs/insidest.html

American Lung Association

PO BOX 265

5 Mountain Road

Burlington, MA 01803

http://www.lungusa.org/air/air_indoor_redux2.html

<http://www.healthhouse.org>

Radon

<http://www.epa.gov/radon/index.html>

'Green' Building/New Building

www.eren.doe.gov/buildings

www.hickoryconsortium.org

www.healthhouse.org

<http://www.healthhouse.org/iaq/buildingscience.asp>

www.energybuilder.com/index.htm

www.healthhouse.org/iaq/tourtext.asp#household_products

<http://www.healthhouse.org/build/Cold%20Climate%20Criteria.pdf>

www.healthhouse.org/about/Jackson?default.asp

Pesticides Awareness & Alternatives/ Other toxic chemicals

Massachusetts Pesticide Awareness Collaborative

www.ci.wellesley.ma.us/nrc/pesticide

Massachusetts Dept. of Food and Agriculture

100 Cambridge St

Boston, MA 02202

617-727-3000

Integrated Pest management

<http://www.state.ma.us/dfa/pesticides/ipm/>

Massachusetts Toxics Use reduction Institute

UMass Lowell

One University Ave,

Lowell, MA 01854

www.turi.org, www.turi.org/community/index.htm

Children's Health Environmental Coalition

www.chechnet.org/healthHouse

Mold

<http://www.uwex.edu/healthyhome/pdf/Mold.pdf>

<http://www.epa.gov/iaq/molds/moldcleanup.html>

Asthma

Asthma & allergy foundation of America,
New England Chapter
220 Boylston St
Chestnut Hill, MA 02467
617-965-7771; 1-877-2ASTHMA (toll free)
www.asthmaandallergies.org

Environmental Triggers of Asthma
<http://www.atsdr.cdc.gov/HEC/HSPH/v12n2indx.html>

“Clear your home of asthma triggers” brochure
<http://www.epa.gov/asthma/asthma.html>

9. What is the vision? Who needs to contribute to the vision to enhance the possibility of change? How can we benefit from thinking about housing issues in the framework of healthiness? What are other cities doing?

We all want to live in healthy homes, and we want our communities to provide healthy housing to its residents. It's the right thing to happen, and it's also the cost effective thing to happen for our society. One child with lead poisoning or asthma taxes our medical and social systems at a far higher cost than the average child. For the child and his or her family, the cost can be devastating, emotionally and physically. For our emergency rooms and medical treatment centers, the cost is in medical services provided. And for each child with lead poisoning, the resultant brain damage can result in huge costs for the schools and social services, especially if the extent of the neurological impairment is extensive and requires lifetime services.

Especially in an older, industrially based city like Lowell, hazards abound. Traffic through out the city spews exhaust emissions, but clearly the downtown area is most likely to be affected in a more concentrated way. Lead is present in every census tract and neighborhood. Pesticide use, indoor and/or outdoor is pervasive, as are fumes from cleaning products. Just like in the rest of the country, people in Lowell smoke. Lowell is dotted with brownfields that when abandoned create hazards of rodents infestation and when improperly rehabilitated threaten nearby residents with lead dust, possibly asbestos fibers, and potentially an assortment of manufacturing byproducts with various levels of toxicity.

Sometimes it all sounds pretty insurmountable, doesn't it? Now that the picture has been painted of what is, let's examine what might be, if healthier homes were a priority.

What are other cities and states doing?

In Ohio: One program was cited in a report by HUD written in 1999. (The entire report can be found at <http://www.hud.gov/offices/lead/reports/HHIFull.pdf>). In Cleveland, OH, an integrated approach was taken to combine lead, mold, and asthma intervention programs. Once lead hazard control work was in progress, the additional expense to add mold and asthma interventions was quite modest.

Another visionary process ongoing in the Cleveland area is the concept called the 'Cleveland EcoVillage'

"Older cities like Cleveland are now being redeveloped, and it is vital that this urban regeneration incorporate advanced ecological design. That is the premise—and the hope—of the Cleveland EcoVillage project.

The EcoVillage is:

- An innovative partnership involving nonprofit organizations, the city, the regional transit authority, private developers, and neighborhood residents.
- A national demonstration project that will showcase green building and transit-oriented development.
- An opportunity to realize the promise of urban life in the most ecological way possible. "

http://www.ecocitycleveland.org/ecologicaldesign/ecovillage/intro_ecovillage.html

In Minnesota: Another interesting vision has been realized in the city of St. Paul, MN. More than 25 private and public organizations have come together to create the ‘Jackson Street Village’. I included the list below to show the variety of those who came together for this vision to become reality. This community was designed to the American Lung Association Health House program guidelines, and incorporates an energy efficient geothermal heat pump for heating and cooling. What is even more remarkable about this housing is that it is designed to be “a ‘supportive housing community’ for families who have experienced problems with chemical dependency and homelessness”. There are 25 units in the village, and it houses approximately 100 individuals.

- American Lung Association Health House Program
- Amherst H. Wilder Foundation
- Cermack Rhoades Architects
- Corporation for Supportive Housing
- Emma B. Howe Foundation
- Family Housing Fund
- Federal Home Loan Bank of Des Moines
- Frerichs Construction (General Contractor)
- Gamble Skogmo Fund
- Metropolitan Council
- Minneapolis Foundation
- Minnesota Department of Commerce Rebuild Minnesota Program
- Minnesota Environmental Initiative
- Minnesota Housing Finance Agency
- Minnesota Pollution Control Agency
- Northeast Entrepreneur Fund
- Ramsey County
- Riehbein Construction
- RS Eden
- City of Saint Paul
- St. Paul Public Housing Agency - Section 8
- Tetra Tech, EMI
- Xcel Energy
- University of Minnesota
- U.S. Department of Housing and Urban Development - Supportive Housing Program
- Wheelock Way Condominium Association
- VIP Program

Wouldn't it be interesting to consider how we in Lowell could work together to make something similar happen in the local area?

So who needs to be involved for the situation in Lowell to change? If we look at the list above as a guideline, we may have an answer. Clearly the city, the university and local colleges need to be involved. Banks, architects, foundations, HUD, various granting organizations, construction firms, local energy manufacturers, housing proponents, community organizations, and city residents.

How can we learn from others, improve on what they've done, and tailor it to the needs of the Lowell community? By choosing to consider healthiness as an integral component for housing, and by choosing to go forward mindful of healthiness. Whether we are part of a coalition or business or college setting, we can choose to keep reminding and informing those who are going forward that our environment is important and it matters not only what we do, but how we do it.

Take home point: There's no one "right" answer to improving the health of the homes in the community. There is a need for a common vision promoting healthier homes for all the city's residents.

Next steps: Consider implementing the EcoVillage concept in the city of Lowell. Incorporate healthiness and sustainability into any current plans your group is developing. Network with other groups to make the dream a reality. Find ways of combining resources with complementary organizations to enlarge your group's vision of the possible.