

# CAHI MONTHLY NEWS



## Presidents Corner

Recently, there have been many Realtors that I have worked with for many many years that have been expressing to me how much the process of buying and selling a house has changed. On the selling end, the internet has made sellers “know it alls” enough to dispute the Realtors recommended sales price. On the buyers end, trouble with banks and mortgage companies exist, but one common complaint is how the younger generation or “millennials” approach the process.

Millennials are the demographic cohort between Generation X and Generation Z. There are no precise dates for when the generation starts and ends. Demographers and researchers typically use the early 1980s as starting birth years and use the mid-1990s to the early 2000s as final birth years for the Millennial Generation.

I have recently had three 25 year plus veteran Realtors tell me how their young clients went on the internet, gathered information, itemized, priced and listed everything discussed during the inspection and cited in the inspection report, coming up with in their eyes “astronomical” price reductions based on their perceived cost of bringing the house “up to snuff”. - Times they are a changin!

I have seen similar issues on my end. I spend a lot of time on the phone telling my clients that the home inspection is not intended to find every little thing wrong with the home and that they may not be able to negotiate the “little things”. I remind them again before we start the inspection. But they still think that everything should be compensated for. This can make everyone’s lives miserable, even ours. They want “instant gratification”. Twenty year old kitchens and baths, while perfectly functional with no major defects, are now being factored into the negotiations. I personally feel that the price of the

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## Meeting Dates!

**October 26th**

**Agenda TBD**

**November 23th**

**Agenda TBD**

**December**

**“No Meeting”**

### MONTHLY MEETINGS – Details & Info

CAHI’s regular monthly meetings are held at the Best Western located at 201 Washington Ave (RT 5), North Haven. Meetings are free to members.

Most meetings are on the fourth Wednesday of the month from 7-9pm. Guests are always welcome! Guests may attend 2 free monthly meetings to experience our presentations, meet our members, and receive a CE attendance certificate.

Joining CAHI may be done at anytime of the year through our Membership Page

## Presidents Corner *continued*

home should reflect the age of the major components, but also plainly disclosed prior to purchase as well.

In other CAHI news, the board has a few changes after the September board meeting. I will be starting my 3rd year as president. Scott Monforte remains the vice president. Dean Aliberti is the Secretary, and Bill Kievit is now the treasurer. Dan Kristainsen and Woody Dawson remain as Directors. Kevin Morey has reluctantly stepped down from his director position due to family commitments. Thank you Kevin for your stint as a director.

We have two new committee members working with the board. They are Rob Gutman and John McKenzie...welcome aboard gentlemen! These two members are tech savvy and will bring some insight to the board as to how CAHI can stay on the cutting edge of technology. I am excited to work with them.

On another front. A report prepared by James Mahoney regarding the "failing foundation problem" in North Central / Northeastern Connecticut was recently released. A copy is included in this newsletter. In summary, the report identifies the trigger to failure as pyrrhite and has stated that the common thread to all the reported failures is concrete provided by JJ Mottes. It sets a time frame of the 1980's to 2003. Mottes also manufactured septic tanks and other precast concrete components in this time frame. The report refers to the problem as a "slow motion" disaster and estimates the cost of repairs to the homes affected to exceed 1 billion dollars.

The report is specifically limiting the target area to north central/northeastern Connecticut. Rumors have it that similar conditions have been identified in other parts of the state, but I have not been able to confirm this. My advice to all is to proceed with caution when inspecting foundations anywhere. Describe in detail when restrictions are present and when foundations are concealed. Any unusual crack patterns should be called out as a major concern. The information in the report does not help home inspectors nor does it even address inspection of foundations. A Department of Consumer Protection representative stated at a meeting for home inspectors earlier this year that if we follow the standards of practice regarding foundation inspections and a problem arises the DCP will back the inspector. That is not enough in my opinion but that is all the support we have for now.

As the fall landscape develops, enjoy the weather and the colors. Stop and smell the roses one last time before old man winter sets in. Remember, peace of mind is precious!

*"You've gotta dance like there's nobody watching, Love like you'll never be hurt, Sing like there's nobody listening  
And live like it's heaven on earth."* — William W. Purkey

Stan

The following is a summary of a report compiled by James Mahoney. The report is an estimate of the number of homes in CT that may be affected by crumbling foundations as a result of using concrete from the Joseph J. Mottes Company in Stafford, CT and the estimated cost to repair them.,

The entire report can be viewed on our website under Useful Links - [State Foundation Report](#).

## Development and Application of a Model to Estimate Costs to Replace Failing Residential Foundations in Connecticut

September 5, 2016

James Mahoney  
Ellington, CT

In Association with the Connecticut Coalition Against Crumbling Basements

### **Disclaimer**

The contents of this report reflect the views of the author who is responsible for the facts and the accuracy of the data presented herein. The contents do not represent the views of the author's employer at the time of writing of this document. The estimates provided in this analysis are intended solely for purposes of understanding the magnitude of the issue discussed herein. The results are concepts and provide a methodology for further identifying areas where further refinement is required. If additional information becomes available, the models and estimates can be further refined.

## EXECUTIVE SUMMARY

This paper outlines the background of the failing residential foundation issue in at least 20 municipalities located in North Central / Northeastern Connecticut (in total, home to 11% of Connecticut's overall population), as well as the development and application of a simple mathematical model to estimate the costs (in 2016 dollars) to replace the residential failed/failing foundations. The model presented herein was developed using publically available data from sources that include the Connecticut Department of Economic and Community Development, US Census, correspondence between State entities, various media pieces and the concrete / construction industry. It is noted that additions to existing homes and repairs made to existing home foundations are not considered herein, as the publicly available data only references new housing permits. In addition, concrete used in the construction of commercial properties, public buildings (e.g., schools), roads, bridges, septic tanks, concrete driveways, swimming pools, footings for decks, sidewalks, stamped concrete patios, and other concrete products are not included in this analysis. Costs associated with the foundations affected in Massachusetts are also not included.

Based on the model inputs and assumptions outlined herein, **the estimated cost to replace affected foundations for residential dwellings is well above \$1 billion dollars for the region; this only represents costs tallied for the 20 Connecticut municipalities that are currently known to be affected.** This is likely a conservative cost estimate.

**This estimate does not take into account the indirect costs to homeowners that are associated with trying to remedy this problem including, but not necessarily limited to: legal fees, engineers' fees, the costs for conducting petrographic analysis, building permit fees and interest on loans.**

**All residents of the 20 identified Connecticut municipalities are affected whether or not they are impacted directly by this problem.** The loss of property value will cause a drop in the Grand Lists of the affected communities, resulting in an increase in taxes, a reduction in services, or a combination thereof. The reduction of property values caused by uncertainty within the housing market, mortgage defaults, bankruptcies and abandoned properties will likely result in widespread suppression of real estate values that could last a generation.

**There are very few "slow-motion disasters" of a similar financial magnitude and duration that have occurred in the United States.**

**What can be concluded is that the order of magnitude of the financial remedy for this problem is very large and will require the collaboration of both the public and private sectors to resolve.**

The following recommendations are made:

- It is recommended that the State of Connecticut obtain records from JJ Mottes from the years 1983 through April 2016 and provide written notification to all potentially affected property owners.
- To understand the magnitude of the public safety issue associated with the potential failures of septic tanks and other pre-cast products produced by JJ Mottes, it is recommended that the State obtain and make public the records of sale of these items.
- It is recommended that the State of Connecticut develop a standard regarding the allowable percentage of deleterious materials (pyrrhotite included) contained in aggregate used in the making of concrete.
- Further, it is recommended that a petrographic analysis of aggregates being used for concrete be performed by a certified laboratory at least every two years and that the petrographic test results be filed with the Connecticut Department of Consumer Protection to ensure that the standard for deleterious materials is met.
- It is recommended that local, State and Federal officials interface with officials in Massachusetts to determine potential solutions that will serve to aid the greater affected region.
- In order to restore confidence in the real estate market in the affected areas and to protect property values, it is recommended that there be a requirement that concrete cores be tested for all foundations installed from 1983 through April 2016 in order for them to be salable. Associated “sub-requirements” and exceptions are also presented in the Recommendations section of this report.
- It is recommended that the State of Connecticut request the core testing results that have been collected by the insurance companies. This represents a significant amount of data which could be used to better understand the scope of this issue.

## **Background:**

In North Central / Northeastern Connecticut, there have been a significant number of concrete foundations that have exhibited a unique pattern of cracking that ultimately leads to homes becoming unsafe. These foundations were poured starting in the early 1980s and the problem has been formally recognized in foundations poured as late as 2003.

The common thread in these foundations appears to be the source of the concrete. The ready mix concrete used in many, if not all, of the foundations reported as exhibiting this problem came from the Joseph J. Mottes Company (JJ Mottes) in Stafford, CT. According to the JJ Mottes website (a "live" website until recently), they are purveyors of ready mix concrete as well as precast products such as septic tanks and other septic drainage structures (e.g., dry wells, infiltration galleries). Through a study being conducted by the Connecticut Department of Consumer Protection, it has been determined that the aggregate used to make the concrete came from Becker's Quarry (owned by the same family as JJ Mottes) in nearby Willington, CT.

It has been determined that the Becker's Quarry aggregate contains the iron sulfide mineral pyrrhotite. When pyrrhotite oxidizes in the presence of water and oxygen, it releases sulfates, which cause the formation of new, secondary minerals (1). These newly formed minerals occupy more space than the original materials contained within the concrete. As the concrete swells in response to the secondary mineral formation, this creates an internal tensile stress within the concrete. Ultimately, the swelling causes the concrete to crack, resulting in the characteristic "map cracking" that is indicative of this problem. This cracking continues to worsen until such time that the foundation becomes unstable. Typically, it takes more than ten years from the time of the concrete placement for the symptoms of this problem (i.e., the cracking) to become visible, as failure of the concrete occurs from the interior to the outward surfaces.

The author has received a petrographic analysis report for a detached garage foundation (unsealed frost walls) poured in 2013. The results, although characterized as inconclusive, do show areas with high levels of ettringite within the air voids (even closing up some of the smaller voids), which may be indicative of sulfate attack; especially for such young concrete. In addition, it was noted in the report that a small portion of the aggregate particles has slightly de-bonded from the cement paste on typically one face of the particle. This may be indicative of the expansion of the cement paste. This same phenomenon was noted to exist in the concrete core samples collected from the author's house foundation which was characterized definitively as suffering from sulfate attack, likely as the result of the presence of pyrrhotite in the aggregate. Pyrrhotite and marcasite (both iron sulfide minerals) were also discovered in the aggregate as part of the petrographic analysis performed on the concrete core taken from the detached garage, further confirming that this problem should be considered present in concrete poured through 2013. Further, it was reported on February 23,

2016 that JJ Mottes continued to purchase their aggregate from Becker's Quarry at least through that date (2). This corroborates the September 22, 2015 statement from JJ Mottes' Secretary, John Patton, that they have not changed their materials or processes since the 1990s (3). As such, the author has assumed that concrete poured by JJ Mottes through 2015 is potentially affected.

To date, this problem has been confirmed in 20 municipalities in North Central / Northeastern Connecticut (4). These Connecticut municipalities include:

Andover	Mansfield
Ashford	Somers
Bolton	South Windsor
Coventry	Stafford
East Hartford	Suffield
East Windsor	Tolland
Ellington	Union
Enfield	Vernon
Glastonbury	Willington
Manchester	Woodstock

Figure 1 shows the municipalities affected, highlighted in blue. Note that additional Connecticut municipalities may be added to the list above as the true geographic extent of this problem is determined.

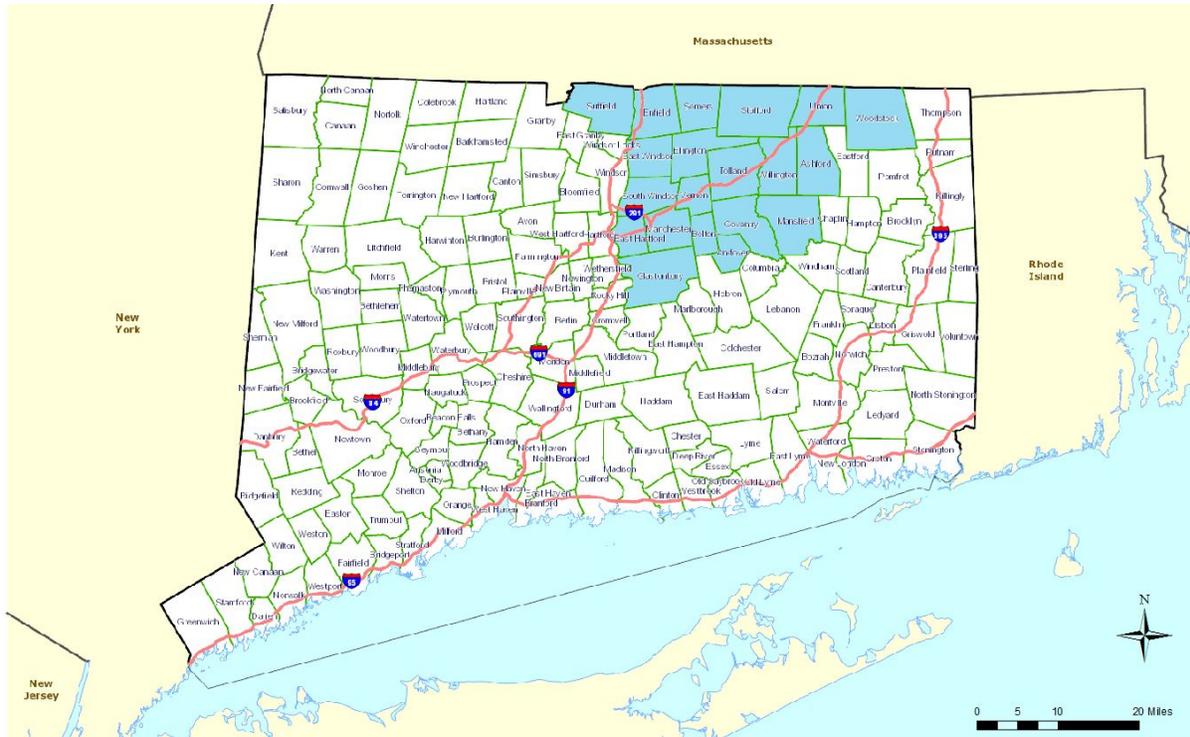


Figure 1 – Municipalities Where Crumbling Foundations Have Been Confirmed

JJ Mottes also delivered concrete to municipalities in Massachusetts. In fact, it has been reported that residential foundations in the following six Massachusetts towns are affected: East Longmeadow; Hampton; Monson; Palmer; Ware and Wales (5). In addition, it has been reported that JJ Mottes delivered concrete from Springfield to Charleton, MA (5). However, the focus of this analysis is solely on residences in Connecticut.

According to the 2015 United States (US) Census, the combined population of the above-referenced 20 Connecticut municipalities is just under 400,000, which represents 11.1% of Connecticut’s population.

The entire report can be viewed on our website under Useful Links - [State Foundation Report](#).

# Pneumococcal Vaccines

National Center for Immunization and Respiratory Diseases, Division of Bacterial Diseases

Adults: Protect Yourself with Pneumococcal Vaccines

**Many adults are at risk for pneumococcal disease. There are two vaccines that provide protection against this serious and sometimes deadly disease. Talk to your healthcare professional to make sure you are up to date on these and other recommended vaccines.**



Each year in the United States, pneumococcal disease kills thousands of adults, including 18,000 adults 65 years or older. Thousands more end up in the hospital because of pneumococcal disease. Pneumococcal disease can cause severe infections of the lungs (pneumonia), bloodstream (bacteremia), and lining of the brain and spinal cord (meningitis). The best way to prevent pneumococcal disease is by getting vaccinated.

There are two vaccines that can prevent pneumococcal disease:

- PCV13 (pneumococcal conjugate vaccine)
- PPSV23 (pneumococcal polysaccharide vaccine)

## Older Adults Need Two Pneumococcal Vaccines

CDC recommends 2 pneumococcal vaccines for all adults 65 years or older.

- You should receive a dose of PCV13 first, followed by a dose of PPSV23, at least 1 year later.
- If you've already received any doses of PPSV23, the dose of PCV13 should be given at least 1 year after receipt of the most recent PPSV23 dose.
- If you've already received a dose of PCV13 at a younger age, another dose of PCV13 is not recommended.

PCV13 protects against 13 strains of pneumococcus bacteria and PPSV23 protects against 23 strains of pneumococcus bacteria. Both vaccines provide protection against illnesses like meningitis and bacteremia. PCV13 also provides protection against pneumonia.

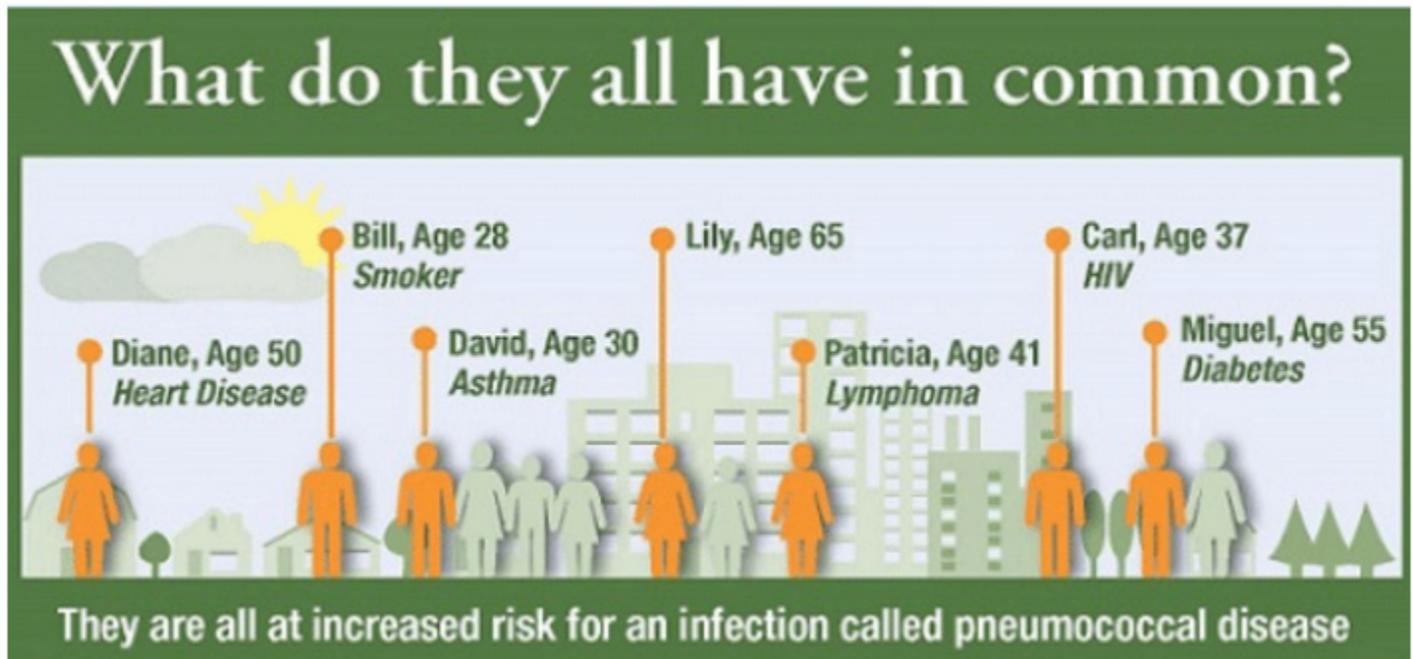
These vaccines are safe, but side effects can occur. Most side effects are mild, such as arm swelling or soreness, and do not affect daily activities.

## Which Adults Should and Shouldn't Get PCV13?

PCV13 is recommended for:

- All adults 65 years or older
- Adults 19 years or older with certain health conditions

Anyone who has ever had a life-threatening allergic reaction to a dose of the vaccine, to an earlier pneumococcal vaccine called PCV7 (or Prevnar), or to any vaccine containing diphtheria toxoid (for example, DTaP), should not get PCV13. Anyone with a severe allergy to any component of PCV13 should not get the vaccine.



## Which Adults Should and Shouldn't Get PPSV23?

PPSV23 is recommended for:

- All adults 65 years or older
- Adults 19 through 64 years old with certain health conditions or who smoke cigarettes

Anyone who has ever had a life-threatening allergic reaction to a dose of PPSV23 or with a severe allergy to any component of the vaccine should not get the vaccine.

## Can Pneumococcal Vaccines Be Given at the Same Time?

No, PCV13 and PPSV23 should not be given at the same time. When both vaccines are recommended, you should receive a dose of PCV13 first, followed by a dose of PPSV23 at another visit. Talk with your healthcare professional to find out when you should come back for the second vaccine.

## Can Influenza and Pneumococcal Vaccines Be Given at the Same Time?

Yes, you can get either pneumococcal vaccine (but not both) when you get the influenza (flu) vaccine. While you don't need a pneumococcal vaccine every year, it is important to get a flu vaccine each flu season.

## How Much Do Pneumococcal Vaccines Cost?

Most private health insurance policies cover pneumococcal vaccines. Check with your insurance provider for details on whether there is any cost to you and for a list of in-network vaccine providers. Medicare Part B also covers 100% of the cost for both pneumococcal vaccines (when administered at least 1 year apart).

## Where Can I Get Pneumococcal Vaccines?

Pneumococcal vaccines may be available at private doctor offices, public or community health clinics, or pharmacies. Check with your doctor or pharmacist or use the Adult Vaccine Finder to help find places that provide pneumococcal vaccines near you.

### Pneumococcal Disease Can Be Deadly for Older Adults

Most pneumococcal infections are mild. However, some can be deadly, especially for adults 65 years or older:

- Pneumococcal pneumonia kills about 1 out of 20 who get it.
- Pneumococcal bacteremia kills about 1 out of 6 who get it.
- Pneumococcal meningitis kills about 1 out of 6 who get it.

## What is Pneumococcal Disease?

Pneumococcal disease is an infection caused by *Streptococcus pneumoniae* bacteria, also known as pneumococcus. Pneumococcal bacteria can cause many types of illnesses that range from mild to very severe. When pneumococcal bacteria spread from the nose and throat to ears or sinuses, it generally causes mild infections. When the bacteria spread into other parts of the body, it can lead to severe health problems such as pneumonia, bacteremia, and meningitis. These illnesses can be life threatening, especially for adults 65 years or older, people with chronic health conditions, and people whose immune systems are weakened by disease or medicine (immunocompromised). Pneumococcal disease can lead to disabilities like deafness, brain damage, or loss of arms or legs.

## How Does Pneumococcal Disease Spread?

Pneumococcal bacteria spread from person to person by direct contact with respiratory secretions, like saliva or mucus. People can carry the bacteria in their nose and throat, and can spread the bacteria without feeling sick.

# A Speedy Solution

## Integrated treatment system helps quickly reduce arsenic levels for Nevada utility

After discovering its three wells contained excessive levels of arsenic, the Spring Creek Utilities Co. hired Sunrise Eng. to help develop a solution. The engineering firm contracted with AdEdge Water Technologies in June 2011 after a competitive bidding process, to design, manufacture and start up an arsenic treatment solution as quickly and economically as possible.

The Spring Creek Utilities Co. provides water service to 1,500 residents in Spring Creek, Nev., outside the city of Elko, Nev., in a sparsely populated northeast portion of the state. Its water system consists of three wells that feed into a centralized distribution system: Well #1 receives water at a maximum flow of 435 gpm, well #3 at a maximum flow of 725 gpm and well #11 at a maximum flow of 720 gpm, for a combined maximum capacity of 1,950 gpm, or 2.8 mgd.

The water in these wells were found to have average arsenic levels ranging from 19 ppb to 35 ppb, well in excess of the Nevada Division of Environmental Protection's (NDEP) maximum contaminant level of 10 ppb. The U.S. Environmental Protection Agency (EPA) and NDEP had ordered Spring Creek to address this problem within six months.

“There was no time to design and construct a conventional facility,” said Greg Gilles, vice president and principal of AdEdge. “One of the things that helped them to select us was our experience with arsenic treatment, and that we could deliver the system in the timeframe they needed.”

### Solution

AdEdge provided five 40-ft.-long **WaterPOD containerized units**: one custom-designed unit for well #1, and two each for wells #3 and #11. Each unit includes HVAC, pedestrian doors, vents, windows and lighting—and, most importantly, an AdEdge GS+ coagulation/filtration package that is sized for the well's maximum flow. These units sit on concrete slab bases and are pre-designed and pre-piped, ready for “plug and play” use.

“Being able to have something that just rolls off a truck, you plug and play and it's ready to roll, saved a lot of time for us,” said Kevin Brown, civil engineering manager on the project for Sunrise Eng.



The treatment process begins in the well house, where a chlorine module injects liquid sodium hypochlorite into the water. This oxidizes arsenic (III) to arsenic (V) to aid in its removal. The water is then injected with ferric chloride to supplement the raw water iron concentration in order to further assist in arsenic removal. From there, the water is treated with CO<sub>2</sub> to reduce its pH level to approximately 7, as adsorbent media and coagulation/filtration processes are typically more effective in waters with pH levels of 6.8 to 7.3.

After pH level is reduced, the water is introduced to the WaterPOD and treated using 26 cu ft of AdEdge GS+ coagulation/ filtration media, housed in carbon-steel vessels (seven at well #1's Water-POD, and six each at the other two wells) in a parallel configuration. AdEdge GS+ is an NSF 61-certified black filter media used for arsenic, iron and manganese removal. Its surface is coated with manganese dioxide, which acts as a catalyst in the oxidation-reduction reaction of iron, arsenic and manganese. The treated water is then stored in an atmospheric tank.

Each system features automated control valves and harnesses, a central control panel with a programmable logic controller (PLC) and a color user interface screen. They also include differential pressure systems; control panel with local gauges, flow sensors and totalizers; and central hydraulic panel with sample ports.

The facility backwashes these systems every two to three days in order to remove any suspended solids that accumulate in the bed and to hydraulically fluff the bed to prevent channeling. AdEdge also provided an [H2Zero backwash reclamation system](#) that reclaims 99.8% of the settled backwash water. The settled suspended solids form a low-percent- solids sludge that can be dewatered and removed to a solid waste landfill.

## Results

The systems started up in December 2011, with all three wells feeding into an overall integrated treatment system that manages the maximum capacity of 1,950 gpm. "It was easy to get the site ready and get the technology up and running. From an engineer's standpoint, it couldn't have been any better," said Brown. Since this treatment process was initiated, the arsenic levels in water from all three wells have been reduced to fewer than 2 ppb—far below the NDEP's maximum contaminant level.



## DPH Commissioner Declares Public Water Supply Emergency for Darien, Greenwich, New Canaan & Stamford

With drought conditions persisting and too little precipitation forecast for the foreseeable future, Connecticut Department of Public Health Commissioner Dr. Raul Pino today signed an order declaring a temporary 30-day public water supply emergency for four Fairfield County towns served by Aquarion Water Company (AWC): Greenwich, Stamford, Darien and New Canaan. Aquarion's water issues are also affecting several towns in nearby Westchester County, NY, who are also served by AWC: Rye, Ryebrook and Port Chester. DPH is working closely with the New York State Health Department and the Westchester County Health Department to ensure an adequate water supply for all seven towns.

The rarely used declaration was requested by AWC to allow the company to divert water from other sources of supply to the four Connecticut towns which are facing a substantial depletion of their public water supply as a result of ongoing drought conditions. DPH, in consultation with the Department of Energy and Environmental Protection (DEEP) and the Public Utility Regulatory Authority (PURA), determined that the declaration was necessary to prevent further depletion of the water supply. To view the Commissioner's Declaration and Order, please [click here](#).

"This is not a step that the Department of Public Health takes lightly or frequently, but it is clear that despite water conservation efforts taken by Aquarion and its customers, diversion of water from other areas in Aquarion's water supply in addition to continued mandatory water conservation measures is necessary to avert a much larger water crisis in these towns," said Commissioner Pino. "Ensuring an adequate supply of safe drinking water remains our number one priority for protecting public health, and we will be monitoring the Aquarion situation very closely through a series of mandatory weekly reports and enhanced water quality testing by Aquarion."

"While this declaration deals specifically with these four towns and neighboring towns in New York, the entire state remains in a drought advisory, and I encourage all Connecticut residents to conserve water during this prolonged period of dry weather," added Commissioner Pino.

The DPH order places several conditions that AWC must meet for the duration of the public water supply emergency. Those conditions include: prohibiting AWC adding new customers without prior approval by DPH; continuing mandatory outdoor watering bans for the CT and NY towns; requiring AWC to provide weekly public notifications on water supplies for the affected towns; requiring AWC to perform a water audit of its top 20 largest water users in the affected towns and assist users identifying ways to reduce usage; and providing several weekly reports to DPH, the Department of Energy and Environmental Protection (DEEP) and local health departments on water supply measurements, effectiveness of conservation practices, communications with town and local health officials in both the CT and NY-affected towns, results of water quality monitoring, and information on daily water diversion totals.

The order will remain in effect for 30 days, but AWC can apply for additional 30 day extensions, up to a maximum of 150 days.

BY KYLE DIAMOND

## Premature Trim Failure



Last year my company, New Dimension Construction, began restoring the exterior envelope of a neo-colonial home, in Millbrook, N.Y. The scope of work included tearing off an existing wood-shingle roof, replacing windows, and upgrading the siding and trim with more-durable materials (1). The house was only 28 years old, but poor trim detailing had caused the exterior cladding and windows to prematurely fail on many parts of the home. For this story, I'm going to focus on a few of the trouble spots I encountered on this project—and continue to encounter on similar projects built around the same time period.

### TROUBLE SPOTS

To begin with, on the windows, the metal cap flashing at the head was not sloped properly and the wood cap trim was not kerf cut (2). This caused water to pond, then run off the ends of metal flashing and behind the siding (3). The siding was scribed around decorative head trim and no thought was given to directing water outwards from the WRB, so it ran down the factory-applied pine trim, collecting at the sills. Roughly half of the home's 30 windows exhibited the level of sill rot shown in photo (4).

Also, the cedar water table trim was rotted throughout the house (5). Traditionally, water table trim was topped off with a wood drip cap, which makes it prone

Photos: 1, 5, Kyle Diamond; 2, 3, 4, Tim Healey



to rotting if regular maintenance painting is not kept up. And if, as was the case here, it has no metal flashing installed over the wood drip cap, it's doomed to failure.

Another problem was at the entry portico, where kickout flashing had not been installed. Here, trim was placed over the step flashing, but no attempt was made to direct water running down the step flashing outward at the bottom (6)—water was allowed to flow behind the siding. This problematic detail also occurred in a couple of other locations, higher up on the roof.

Finally, at the rake returns, the aluminum cap flashing sloped the wrong way, which caused water to pond against the trim and siding (7). The returns were probably built with too little slope to begin with, and over the years, settling caused them to reverse slope. Eventually, the silicone caulk sealing the aluminum cap flashing failed. When we started our repairs, we found the underlying rake-return boxes, adjacent trim, and framing had turned into compost (8).

**MIXING NEW PRODUCTS WITH TIME-TESTED METHODS**

Working one facade at a time, we removed the existing siding

and trim and replaced any rotted sheathing we came across. For the new weather-resistant barrier (WRB), we opted to use a drainable housewrap manufactured by Benjamin Obdyke called "HydroGap." It comes with raised dots placed in serpentine pattern that provide a capillary break between the WRB and new siding, while also offering some ventilation. For the new siding, we installed HardiPlank lap siding, which we had pre-primed and painted. All the replacement trim was cellular PVC manufactured by Koma and the metal flashing was 16-ounce copper—we like copper because it's long lasting and aesthetically pleasing and because you can solder the seam-work rather than relying on sealants to make watertight joints.

**A better head detail.** We joined the Koma head, jamb, and sill stock on the ground and fastened the resulting trim surrounds in place using the Cortex hidden fastening system. Out of Koma, we milled cap trim with a slope for drainage and a continuous kerf cut, and decorative molding. With our Tapco Pro-III metal brake and metal cut-off wheel, we fabricated the copper cap flashings on site.

After installing the PVC head cap trim, we slit the HydroGap

Photos 6, Tim Healey; 7, 8, 9, 10, Kyle Diamond



WRB and slid the vertical leg of the cap flashing into the cut opening (9). To direct water outward from the head flashing, we slipped square copper flashing under the cap flashing on both sides of the head trim; the bottom of square flashing was lapped onto the fiber-cement siding. The slit in the WRB was sealed with 3M all-weather flashing tape (10).

Later on, the siding was butted to the head trim and then the decorative trim (with mitered returns glued up) was installed. This avoided the need to scribe the fiber-cement siding around a decorative molding, eliminating a potential water entry point, as was the case with previous head flashing.

**Rot-proof water table.** We replaced the existing rotted cedar water table, base, and corner board trim with Koma; the home's upper trim (fascia, frieze, rake, and soffit) was in good shape. For the water table, we purchased new Azek PVC drip cap; its trim profile was sloped for drainage and had a continuous kerf on the bottom edge. We fastened off the 12-inch-wide water table with Cortex screws and then installed the PVC drip cap with white aluminum L-flashing on top (lapped under the WRB) to prevent water from getting behind it.

In the rear of house, the existing water table trim transitioned into base trim, which butted stone pavers on a raised patio area. The existing rotted patio-to-wall base trim was too close to the ground and was not flashed properly. Here, we fit copper Z-flashing between the pavers and the rigid foundation insulation (11); PVC base trim would be added later on. Stone entry steps at the rear patio and front portico were rebuilt and pitched away from the house (12). The PVC corner boards were built to match the existing; the mitered drip cap was milled with a slope for drainage and a continuous kerf.

**Portico roof.** For aesthetic reasons, we doubled up on the new kickout flashing; the larger, upper kickout sheds most of the water, allowing the lower one to be more subdued (13). We salvaged as much as we could of the portico roof. We rebuilt rake-return boxes to slope, trimming them out with Koma. The rake-return cap flashing was made with three pieces of copper, its seams soldered to act as one piece (14).

*Kyle Diamond co-owns New Dimension Construction, in Millbrook, N.Y., with his father, Dale Diamond.*

Photos: Kyle Diamond

# Fall Season Safety Tips

By Kate Miller-Wilson

As the air turns cooler and leaves drop from the trees, it's important to keep a few important fall safety tips in mind. With proper precautions and safety awareness, your family can enjoy that crisp autumn weather while avoiding some of the dangers that come with the season.

## Fire Safety Tips for Fall

When the weather turns cold most people spend more time inside their homes using fireplaces, furnaces, and heaters to keep warm. There's nothing quite as cozy as a fire, but it presents some safety hazards. Keep these tips in mind.

### Service Your Furnace

Before the cold autumn and winter weather sets in, be sure to call your heating and cooling company to service your furnace. A specialist should inspect the furnace to make sure everything is in working order and that there are no leaks.

### Use Fireplaces Safely

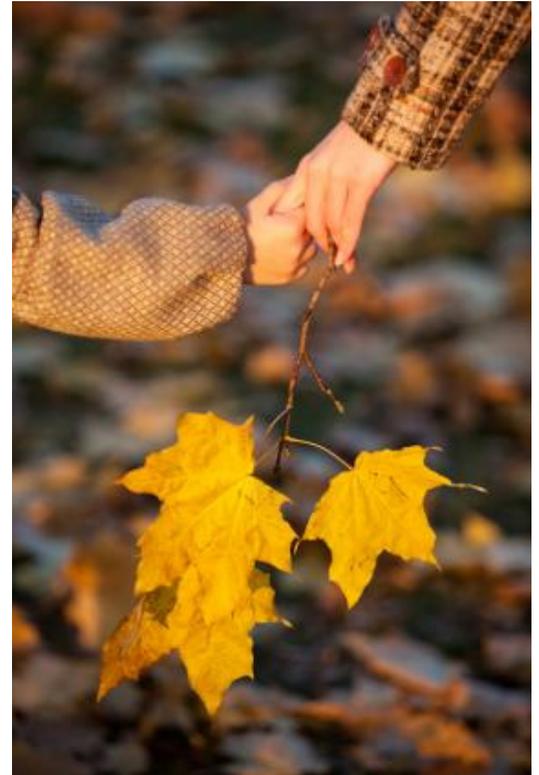
Keep that fire in its proper place by using a fireplace screen to keep sparks from flying out of the fireplace. Never leave a burning fire unattended, and make sure a fire in a fireplace is completely out before going to bed.

### Use Caution with Space Heaters

A space heater can be an effective way to warm up a chilly room, but it's essential that you read the instructions on the unit before you use it. If your space heater requires venting, make sure you have vented it to the outdoors. Never use your stove or oven to heat your home; only use space heaters that are approved for this purpose. Always allow at least three feet of empty area around space heaters.

### Reconsider Leaf Burning

The Air Defenders reports that burning leaves produces dangerous and cancer-causing chemicals and urges homeowners to avoid disposing of leaves this way. If you decide to burn leaves, wear a protective mask. Burning leaves should only be attempted far away from a house or other structures on a homeowner's property. Always check the weather forecast before starting to burn leaves. This activity should not be attempted in windy conditions.



## **Exercise Candle Caution**

Candles are a great way to give a room that warm glow, but they can also cause fires. According to the National Candle Association, almost 10,000 home fires start with improper candle use. Never leave candles burning if you go out or go to sleep, and keep your candles away from pets and kids.

## **Change Smoke Alarm Batteries**

Change the batteries in your smoke alarms and carbon monoxide detectors when you turn back your clocks for Daylight Saving Time. Make sure to check the alarms with the new batteries installed. Check and replace any home fire extinguishers that have expired.

## **Safety Tips for Fall Driving**

There's nothing more beautiful than a fall drive, but this season brings some unique hazards for drivers. Being aware of these potential dangers can help keep you and your family safe and prevent accidents.

### **Be Aware of Poor Visibility**

Falling leaves, while beautiful, can obscure your vision, as can rain and fog. Shorter days are part of the fall season, making it more difficult to see children playing or people walking and riding bicycles. Be aware of limitations in your visibility, and slow down if you can't see well. Use your dimmed headlights in bad weather with decreased visibility. If possible, try not to be on the roads when it's hard to see.

### **Watch for Children**

Children love to play in piles of leaves, so use extra caution where leaves are piled at curbside. In addition, the school bus will be making its rounds now that school is back in session. In addition to educating children about back-to-school safety, it's important to stay vigilant as a driver.

### **Slow Down on Wet Pavement**

In many areas of the country, rain is common during the autumn. If it's raining, keep a safe distance from the car in front of you.

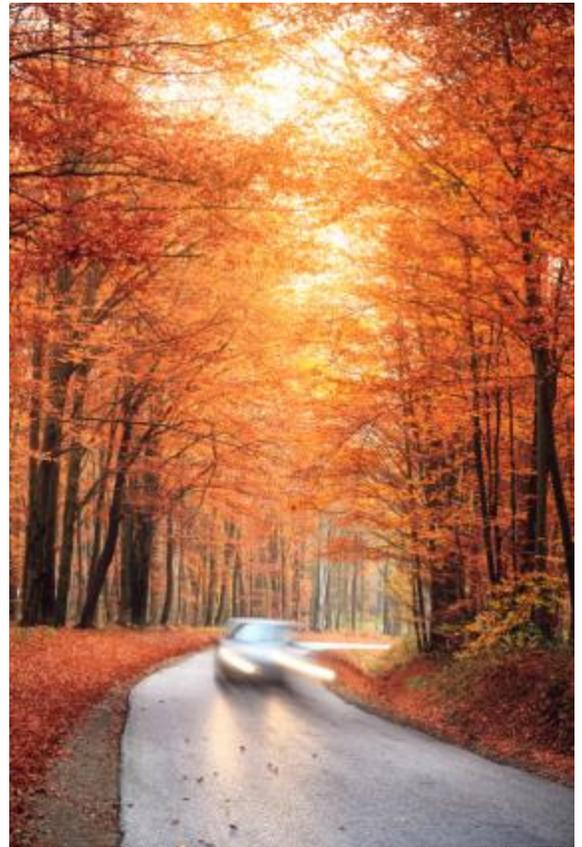
Wet roads make it more difficult to stop. When wet leaves are on roadways, they make the pavement slippery, and it can be difficult for drivers to get good traction.

### **Be Prepared for Bright Sunlight**

When sunrise occurs later in the morning, it can also present challenges for drivers. Have a pair of sunglasses in the vehicle to wear when the sun is bright is a good strategy. If it becomes too difficult to see because of bright sunlight or glare, a good strategy is for the driver to pull over until he or she can see again.

### **Watch Out for Ice**

As the temperatures drop further at night, a driver will need to spend some extra time in the morning scraping frost off his or her vehicle. Shady spots on the roadway may be home to black ice, which a driver may not be aware of until his or her car starts to skid on it.



## Safety Tips for Fall Boaters

According to a report from the US Coast Guard, autumn boating accidents are far more likely to be fatal than those that occur during the summer months. Although there are many more boating accidents in the summer season, boaters involved in accidents during the fall months are exposed to cold water and other weather hazards. Keep these tips in mind for safe autumn boating.



### Be Prepared for Changing Weather

Since fall weather can change quickly, you should always be prepared for possible cold, windy, and wet weather even if the sun is shining. Stay closer to shore, so you can turn back if the weather changes. Bring appropriate clothing, such as warm coats, rain gear, and gloves.

### Watch for Signs of Hypothermia

Small open boats combined with cold, wet weather can lead to possible hypothermia. According to the Mayo Clinic, these are a few of the signs you should know:

- Shivering or trembling
- General lack of coordination, including stumbling and dropping things
- Drowsiness, confusion, and apathy
- Mumbling and slurring of words
- Weak pulse and shallow breathing

### Tell Others About Your Trip

Make sure you tell a friend or family member your boating plan and your expected return time. There are fewer boaters in the fall to help in the case of an accident or emergency.

### Always Wear Life Jackets

Wearing your life jacket, while always a smart move, is even more important in the fall. If you should accidentally fall overboard, the cold water will quickly drain away your strength.

## Autumn Home Maintenance Safety Tips

Fall is the time for yard clean-ups and readying your house for the cold winter ahead. Keep these safety tips in mind as you work.

### Look Up Before Pruning Trees

If you have decided that your yard needs to be spruced up by trimming your trees, be sure to look up and survey the area carefully before you start. Make careful note of where power lines are located before you set up your ladder so that it is positioned away from them.

### **Use Caution on Ladders**

Wearing appropriate footwear is important when using a ladder; shoes or boots may be wet, causing you to slip as you climb the ladder. The ladder should be positioned on a flat surface before use. Be sure that the tools you are using are specifically designed for this purpose and are in good condition before starting work.

### **Clean Up Fallen Leaves**

Keep your driveway and walkway clear of falling leaves. Wet leaves can create a hazard for pedestrians in the fall by making sidewalks slippery. Later in the season, snow may mix with leaves to increase the risk of falling. Homeowners should mulch or rake up fallen leaves and dispose of them according to local bylaws.



## ***Safely Enjoy the Beauty of the Season***

By keeping these important fall safety tips in mind, you can be sure you are doing everything you can to protect yourself and your family from seasonal dangers. This will leave your mind free to enjoy the beauty of this glorious season.

# Fall and Winter Home Maintenance Checklist

**15 things for you (or the handyman) to tackle before winter sets in.**

By PAT MERTZ ESSWEIN, Associate Editor  
September 22, 2011

Now that fall is officially here, it's time to prepare your home for cold weather. These steps, most of which you can do yourself, will lower your utility bills and protect your investment.

## **1. Tune up your heating system.**

For about \$80 to \$100, a technician will inspect your furnace or heat pump to be sure the system is clean and in good repair, and that it can achieve its manufacturer-rated efficiency. The inspection also measures carbon-monoxide leakage.

If you act soon, you'll minimize the chance of being 200th in line for repairs on the coldest day of the year. Look for a heating and air-conditioning contractor that belongs to the [Air Conditioning Contractors of America](#) and employs technicians certified by the North American Technician Excellence (NATE) program. The contractor should follow the protocol for ACCA's "national standard for residential maintenance" (or the QM, short for "quality maintenance").

## **2. Reverse your ceiling fans.**

If your ceiling fan has a reverse switch, use it to run the fan's blades in a clockwise direction after you turn on your heat. Energy Star says the fan will produce an updraft and push down into the room heated air from the ceiling (remember, hot air rises). This is especially helpful in rooms with high ceilings -- and it might even allow you to turn down your thermostat by a degree or two for greater energy savings.

## **3. Prevent ice dams.**

If your home had lots of icicles last winter -- or worse, ice dams, which can cause meltwater to back up and flow into your house -- take steps to prevent potential damage this year. A home-energy auditor or weatherization contractor can identify and fix air leaks and inadequate insulation in your home's attic that can lead to ice dams. If you have the work done before December 31, 2011, you can claim the federal energy-efficiency tax credit for 10% of the cost (excluding installation), up to \$500. Your state or utility may offer a rebate, too.

## **4. Hit the roof.**

Or at least scan it closely with binoculars. Look for damaged, loose or missing shingles that may leak during winter's storms or from melting snow. If need be, hire a handyman to repair a few shingles (\$95 to \$1275, according to [www.costhelper.com](#)) or a roofer for a larger section (\$100 to \$350 for a 100-square-foot area). Check and repair breaks in the flashing seals around vent stacks and chimneys, too.

If your roof is flat and surfaced with asphalt and pebbles, as many are in the Southwest, rake or blow off fall leaves and pine needles, which hold moisture, says Bill Richardson, past president of the American Society of Home Inspectors, in Albuquerque. (Don't sweep aside the pebbles; that will expose the asphalt to damaging sunlight.)

## **5. Caulk around windows and doors.**

Richardson says that if the gaps between siding and window or door frames are bigger than the width of a nickel, you need to reapply exterior caulk. (Check the joints in window and door frames, too.) Silicone caulk is best for exterior use because it won't shrink and it's impervious to the elements. Try GE's Silicone II Window and Door product, which is "rain ready" in three hours (\$6 at Home Depot). Check window-glazing putty, too (which seals glass into the window frame). Add weatherstripping as needed around doors, making sure you cannot see any daylight from inside your home.

## **6. Clean the gutters.**

If your gutters are full of detritus, water can back up against the house and damage roofing, siding and wood trim -- plus cause leaks and ice dams. You'll typically pay \$70 to \$225 to clean gutters on a single-story house, depending on its size. Also look for missing or damaged gutters and fascia boards and repair them.

## **7. Divert water.**

Add extensions to downspouts so that water runs at least 3 to 4 feet away from the foundation, says David Lupberger, home-improvement expert for ServiceMagic, which connects consumers with service providers. For example, HomeDepot.com sells Amerimax Flex-a-Spout extension (which extends 25 to 55 inches) for \$9.

## **8. Turn off exterior faucets.**

Undrained water in pipes can freeze, which will cause pipes to burst as the ice expands. Start by disconnecting all garden hoses and draining the water that remains in faucets. If you don't have frost-proof faucets (homes more than ten to 15 years old typically do not), turn off the shut-off valve inside your home.

## **9. Drain your lawn-irrigation system.**

But call in a professional to do the job. Your sprinkler service will charge \$75 to \$150, depending on the size of the system. Draining sprinkler-system pipes, as with spigots, will help avoid freezing and leaks.

## **10. Mulch leaves when you mow.**

Mow your leaves instead of raking them, say studies at the University of Michigan and Purdue. The trick is to cut the leaves, while dry, into dime-sized pieces that will fall among the grass blades, where they will decompose and nourish your lawn over the winter. Use your lawn mower without its bag, and optionally swap the cutting blade for a mulching blade (about \$15 to \$20). The process may take several passes. For more information, see "[Turn Over a New Leaf/Mulching Leaves in Place.](#)"

## **11. Prepare to stow your mower.**

As the mower sits through the winter, fuel remaining in its engine will decompose, "varnishing" the carburetor and causing difficulty when you try to start the engine in the spring. John Deere offers these preventive steps: If you've added stabilizer to your fuel to keep it fresh longer, then fill the gas tank to the top with more stabilized fuel and run the engine briefly to allow it to circulate. If not, wait until the tank is nearly empty from use and run the engine (outdoors) to use up the remaining fuel. Check your mower's manual for other cold-weather storage steps.

### **12. Don't prune trees or shrubs until late-winter.**

You may be tempted to get out the pruning shears after the leaves fall, when you can first see the underlying structure of the plant. But horticulturalists advise waiting to prune until late winter for most plants, when they've been long dormant and just before spring growth begins. To get advice specific to your plants and region, consult master gardeners at local nurseries or horticulturalists with your state university's cooperation extension department. One exception: You may need to hire an arborist to remove deadfall or trim limbs close to your home or power lines that could cause problems in a winter storm.

### **13. Test your sump pump.**

Slowly pour several gallons of water into the sump pit to see whether the pump turns on. You should do this every few months, but especially after a long dry season or before a rainy one. For more complete instructions for testing and maintenance, check your owner's manual. Most sump pumps last about ten years, according to Chubb Personal Insurance.

### **14. Call a chimney sweep.**

Before you burn the Yule log, make sure your fireplace (or any heating appliance burning gas, oil, wood or coal), chimney and vents are clean and in good repair. That will prevent chimney fires and prevent carbon monoxide from creeping into your home. Search for a sweep certified by the Chimney Safety Institute of America. You can expect to pay \$50 to \$90 for an inspection to see if you need a cleaning, and \$100 to \$300 for the cleaning, according to [www.costowl.com](http://www.costowl.com).

### **15. Avoid the rush.**

Don't wait for the first winter storm to restock cold-weather essentials, such as salt or ice melt. If you can't abide a snowblower's roar or the back-breaking workout of shoveling, check out the Sno Wovel, a wheeled shovel that does much of the heavy-lifting for you (\$150; go to [www.wovel.com](http://www.wovel.com) to locate retailers or Amazon.com to buy it online).

# The Definitive Legal Guide to Ecommerce

by Mark Macdonald



Whether you're starting a brand new business or you're an established company, taking your business online is a fantastic and exciting growth opportunity.

In fact, there has never been a better time to start an ecommerce business.

However, with all of the advantages an online business brings, there are also some complex legal issues that go along with them. Different countries have different laws and knowing which ones apply to you is critical. In addition to the large variety of laws to take into account, you must remember that the law is fluid and subject to change. In order to reap the rewards that a successful online store can bring, it's important to stay informed and protect yourself and your business.

And that's exactly why we created this guide.

The Definitive Legal Guide to Ecommerce is a comprehensive - but easy to understand - resource that outlines the most common legal issues online business owners face. To start, we've created guides for the following countries:

- United States
- Canada
- Australia
- United Kingdom
- New Zealand
- Singapore

Here's some of the important topics you'll learn about:

- **Trademark Registration:** Trademarks can be a valuable business asset. It's important to be aware of trademarks not only to protect your rights, but also to ensure that you're not infringing on the rights of others when creating one.
- **Privacy — Anti Spam:** Email marketing is a powerful way to drive sales. This chapter helps you make sure your business practices are in line with your country's anti-spam laws.
- **Privacy — Data Protection:** Whether you conduct business online or offline, you have access to people's personal information. Privacy is important to them and this chapter shows you how to make sure you protect people's information and have a strong privacy policy in place.
- **Business Organization:** When you're just starting out, deciding on the right structure for your venture and understanding the law around business organization is important. This chapter details the different options you have when it comes to structuring your business in a way that makes sense for you.

[Click here to read The Definitive Legal Guide to Ecommerce.](#)

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About the Author: Mark Macdonald is the Content Manager at Shopify. Get more from Mark on Twitter and Google+.

# Recall Notice

**Name of product:**

**Samsung Galaxy Note7 smartphones**

**Hazard:**

The lithium-ion battery in the Galaxy Note7 smartphones can overheat and catch fire, posing serious fire and burn hazard to consumers.

**Remedy:**

Refund/Replace

**Consumer Contact:**

Contact your wireless carrier, place of purchase or Samsung toll-free at 844-365-6197 anytime, or go online at <http://www.samsung.com>



## Recall Details Report an Incident Involving this Product

**Units:**

About 1.9 million (This includes the 1 million Galaxy Note7s recalled on September 15, 2016 )

**Description:**

This recall involves all Samsung Galaxy Note7 smartphones. The recalled devices have a 5.7 inch screen and were sold in the following colors: black onyx, blue coral, gold platinum and silver titanium with a matching stylus. Samsung is printed on the top front of the phone and Galaxy Note7 is printed on the back of the phone. This recall involves all Galaxy Note7 devices received as replacements as part of the previous Galaxy Note7 recall on September 15, 2016 and any Galaxy Note 7 with a green battery icon, regardless of date purchased or IMEI.

**Incidents/Injuries:**

Samsung has received 96 reports of batteries in Note7 phones overheating in the U.S., including 23 new reports since the September 15 recall announcement. Samsung has received 13 reports of burns and 47 reports of property damage associated with Note7 phones.

**Remedy:**

*Consumers should immediately stop using and power down all Galaxy Note7 devices, including Note7 devices received as replacements in the previous recall.*

Contact the wireless carrier, retail outlet or Samsung.com where you purchased your device to receive a refund or free exchange for a new replacement device plus incentives. Consumers who purchased their phones from other sources should contact Samsung directly to receive a free remedy. Go to <http://www.samsung.com> and <http://www.samsung.com/us/note7recall/> for more details.

**Sold At:**

Wireless carriers and electronic stores nationwide, including AT&T, Best Buy, Sprint, T-Mobile, US Cellular, Verizon stores, online at [www.samsung.com](http://www.samsung.com) and other websites and on third party websites from August 2016 through October 2016 for between \$850 and \$890.

**Manufacturer(s):**

Samsung Electronics America Inc., of Ridgefield Park, N.J.

**Manufactured In:**

Corea del Sur y China

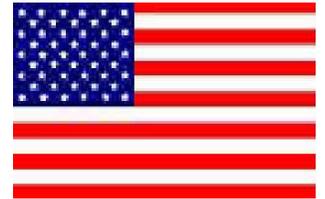
The U.S. Consumer Product Safety Commission is charged with protecting the public from unreasonable risks of injury or death associated with the use of thousands of types of consumer products under the agency's jurisdiction. Deaths, injuries, and property damage from consumer product incidents cost the nation more than \$1 trillion annually. CPSC is committed to protecting consumers and families from products that pose a fire, electrical, chemical or mechanical hazard. CPSC's work to help ensure the safety of consumer products - such as toys, cribs, power tools, cigarette lighters and household chemicals -- contributed to a decline in the rate of deaths and injuries associated with consumer products over the past 40 years.

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