

## Historic Flooding in Madison: Cleaning Up, Moving Forward from Summer Storms

### Report Your Storm-Related Problems to City Engineering

by Greg Fries, Engineering Division

The historic flooding in Madison and surrounding areas this summer points to the need to reconsider how we, as a community, design new developments, manage our lakes and think about the extremes of our weather patterns now and in the future. The first step is to document all the problems that were experienced during the August 20th storm and the days that followed, as lake levels rose and Lake Monona flooded downtown Madison. City Engineering received hundreds of contacts as a result of this storm, but we know it is not a complete list.

**We want to know about storm-related problems you experienced.** If you haven't reported your flooding issue, please report at: [cityofmadison.com/reportflooding](http://cityofmadison.com/reportflooding). If you have already reported via 2-1-1 or other means, City Engineering would appreciate you re-reporting your flood concern through the portal to ensure that we have accurate and complete information.

The most severe storm that hit on August 20th dumped approximately 10 inches or more on the west side of Madison and Dane County. This rain happened over a span of approximately eight hours and qualifies as a 1000-year, or historic event. But what does that mean?

Engineers often use the term "100-year storm event" to describe an intense storm. This term offers little comfort when you may have been impacted by two in the same year. A short explanation of this term is, according to historical data about rainfall, the probability of Madison receiving 6.66 inches of rain in 24 hours is once in 100 years. In other words, such a rain event has a one percent chance of occurring in any year.

You may have noticed there were two components to the storm referenced above. First, there was the amount of rain and second, the span of time in which it fell. It is possible to have a 100-year, 1-hour storm (3.04 inches) and a 100-year, 24-hour storm (6.66 inches) and all the mixes of time and amount of rain in between those examples.

Damage from the August 20th storm has been devastating for many residents whose homes were significantly wrecked by flood waters. In some areas on the west side, flood water overtopped streets by nearly five feet. While most City critical infrastructure is functional again, City Engineering and other City agencies are still assessing all the damage reports to public and private properties.

As if the immediate flooding caused by the rain was not enough, the volume of water caused Lake Mendota to rise 16 inches one day after the rain. Within a few days, Lake Monona rose to more than 10 inches above the 100-year flood elevation, setting new record highs. Downtown Madison was flooded. Streets were closed, parking was removed, and sandbags were filled. Volunteer groups and the National Guard rallied to help sandbag impacted properties. Madison alone deployed over 225,000 sandbags.

The next stage of this event will be just as difficult to manage. Going into winter with high lake levels, significant ice damage along the shoreline can be expected. If we also have significant snowfall and spring rains, high lake levels and flooding concerns will persist in 2019.

**We want to know about storm-related problems you experienced. Please report at:** [cityofmadison.com/reportflooding](http://cityofmadison.com/reportflooding).



## A Message from Our City Engineer

The severe storm that hit Madison on August 20, 2018 was arguably the most devastating storm in the City of Madison's 170-year history. Although even worse outside of Madison, here in the City it accounted for millions of dollars in damages and, sadly, the loss of a life.

The tragic storm and the threat of flooding that resulted from high lake levels that followed the storm brought out the very best in people. Staff from 11 agencies came together to manage the event. A public information campaign was launched that included press releases, social media, and the hand delivery of information to residents and businesses that were in harm's way. The City undertook its first sandbag production effort, at times working through the night producing sandbags. Staff also worked through the night to close roadways if necessary and to provide up to the minute information to the public. Using our website, the City undertook an effort to match volunteers with people needing help. Thousands of volunteers assisted in the effort to protect properties with sandbags. The National Guard and the Department of Corrections also assisted in the sandbagging effort.

The National Weather Service, Dane County Emergency Management, Dane County Land and Water Resources, the Wisconsin DOT Traffic Operations Center, Wisconsin Emergency Management and the University of Wisconsin all assisted. Non-profit organizations such as the United Way, Community Partners, Big Top Events, the Red Cross and the Salvation Army contributed in meaningful ways.

These organizations and the many citizen volunteers who assisted, in most cases, helped people they had never met before.

Thank you to all who came together in service to our community at a great time of need.

*Rob Phillips*

## Winter Salt Certification Program: Best Practices for Environment and Safe Pavement

by Phil Gaebler, Engineering Division

The City's Winter Salt Certification Program, now in its second year, trains applicators to reduce the amount of deicers, including salt, to help cut chloride levels accumulating in our lakes and groundwater. As our lakes are freshwater, the plants and animals living in the lakes need chloride levels to stay low. While chloride levels are still at a point most lake life can tolerate, levels are increasing. An estimated 30% reduction in deicers would keep levels where they are at. A 60% reduction would return lake conditions to levels not recorded since the 1970's.

The City's goal is to certify all City employed salt applicators before the 2018-2019 winter and increasing the number of certified private applicators to meet demand. Residents can assist in achieving this important goal by asking anyone they hire to become certified and to make an effort to reduce their salt use. Wisconsin Saltwise, [www.wisaltwise.com](http://www.wisaltwise.com), has resources for both professionals and homeowners to reduce their winter salt use.

In general, winter salt can be dramatically reduced by removing as much snow as possible. Start by using a broom to get to bare pavement, and remembering that 12 ounces of salt is enough to treat 10 sidewalk panels (see Be Salt Wise! graphic to the right).

For a list of individuals who have successfully completed Winter Salt Certification training, please visit: [www.cityofmadison.com/live-work/sustainability/winter-salt-certification/find-certified-applicators](http://www.cityofmadison.com/live-work/sustainability/winter-salt-certification/find-certified-applicators).

## Comprehensive Plan Sets Priorities for Madison's Future

by Kirstie Laatsch, Department of Planning, Community and Economic Development

The City has adopted its 2018 Comprehensive Plan. The Plan is a document that will guide the City's actions within six distinct elements, shown in the diagram below. The City sought feedback from the community to inform the Comprehensive Plan through an extensive public engagement process called "Imagine Madison." Imagine Madison reached over 15,000 residents to learn what strategies should be prioritized over the next 10 years to improve Madison and address challenges within our community. The Plan covers strategies related to topics such as the environment, transportation, and housing that will enable our community to use resources effectively and adapt to change. The Plan also includes a growth framework, which addresses the physical aspects of the community's vision as it pertains to future growth. The growth framework is used regularly to review development proposals and make sure future growth is consistent with the community's vision.



One of the six themes set forth by the Plan is a green and resilient city. It outlines nine strategies and 27 accompanying actions to ensure Madison becomes a leader in stewardship of our land, air, and water resources. Some of those strategies and actions include:

- » Strategy #1: Protect Madison's water supply and infrastructure to provide **safe, clean drinking water**.
  - Continue accelerated water-main replacement and infrastructure renewal.
  - Expand education about road and parking lot salt application.
  - Continue to help lower-income homeowners make water conservation upgrades.
- » Strategy #2: Improve **lake and stream water quality**.
  - Keep phosphorus and other pollutants out of the lakes.
  - Increase frequency of leaf collection/street sweeping to reduce runoff.
  - Further incentivize rain gardens and other green infrastructure.
- » Strategy #6: Develop a healthy and diverse **urban tree canopy**.
  - Prioritize tree species diversity to create a resilient tree canopy.
  - Work across agencies to increase the tree canopy.
  - Encourage the placement of utilities that fosters street tree growth.

For more information or to view the adopted Comprehensive Plan, visit: [www.cityofmadison.com/dpced/planning](http://www.cityofmadison.com/dpced/planning).

# Be Salt Wise!

Once you put salt down, it doesn't go away. It washes off surfaces and accumulates in local lakes, streams and drinking water. You can keep sidewalks and driveways safe this winter while protecting our waters by following these simple steps:

### 1. Shovel



Clear walkways and other areas before the snow turns to ice. The more snow you remove manually, the less salt you will have to use and the more effective it will be.

### 2. Scatter



If you apply salt to pavement, aim for a pattern like this, leaving space between salt grains. A coffee mug full of salt is enough for about 60-70 feet of sidewalk. A hand spreader can help create this pattern.

### 3. Switch



When the pavement temperature is below 15 degrees, salt won't work. Switch to a different ice melter (like a blend) that works at a lower temperature, or use sand for traction.

Learn more at [www.wisaltwise.com](http://www.wisaltwise.com).

### CITY ENGINEERING CONTACTS

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Main Office:  
**(608) 266-4751**

Erosion Control:  
**(608) 267-1199**

Stormwater  
Utility Billing:  
**(608) 267-1199**

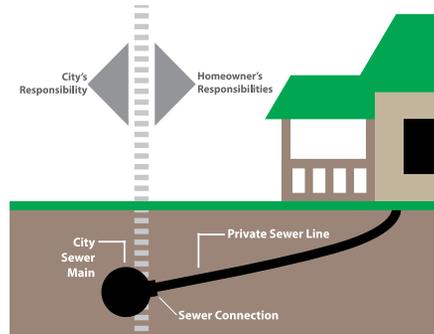
Sidewalk Concerns:  
**(608) 266-4537**

Sewer Maintenance:  
**(608) 266-4430**

## Sanitary Sewer—Public vs. Private Ownership & Responsibilities

by Kathy Cryan, Engineering Division

Most people take the sanitary sewer system for granted—flush, and it goes away! Then comes the day when that doesn't happen. Unfortunately, that's when many homeowners realize for the first time that the sanitary sewer service line, or sewer lateral as it is often called, that runs between the public sewer main in the street and their home is owned by the homeowner, not the Madison Sewer Utility (MSU). And the homeowner is responsible for the maintenance and repair of their private sewer lateral.



### How to Protect Your Home and Family

#### Use the Sanitary Sewer Only for its Intended Purpose!

- » Stop allowing grease and food products to go down the kitchen sink. Your pipes are not built to handle these food items and they can cause a blockage.
- » Don't flush the wrong products. The only product that should be disposed of in your toilet is toilet paper. There is no such thing as a flushable wipe. Likewise, do not flush feminine products, diapers, paper towels or kitty litter. None of these products will disintegrate like toilet paper.

#### Maintain Your Sewer—Prevention Can Save You \$

- » **Verify that you have a backwater valve and maintain it.** This is a one-way valve that allows wastewater to flow from your home to the public system but prevents the backup of sewage into the home. This valve is a flap or ball that needs to be periodically cleaned to remove build-up that may prevent the valve from closing fully.
- » **Do not plant trees and shrubs over the private sanitary sewer lateral.** Tree roots are a major cause of lateral backups. Tree roots can enter the service pipe at joints and travel a long way, causing blockages along the way. Tree roots can also create structural defects when they crack and break pipes as they grow.

#### What to Do When You Have a Problem

If you experience a sewer backup, call City Engineering at (608) 266-4430. A crew will be dispatched to determine if the problem is in the public sewer main and if so, the crew will remove the blockage. If the problem is not in the public sewer main, the crew will let you know so you can contract with a private plumbing or sewer drain cleaning company to remove the blockage in your private lateral.

Structural defects occur as systems age and deteriorate. These defects can include full or partial pipe collapse, cracks, holes, and fractures. We recommend having your line televised by a plumbing or sewer drain cleaning company to verify a break prior to entering into a contract to repair. Engineering staff are available to review the video inspection and provide their opinion on the need for a repair.

#### Private Insurance and Warranty Options

Damage to your home and belongings resulting from a sanitary sewer backup is typically not covered by a standard homeowners' insurance policy. Affordable sewer backup riders or endorsements are available to provide this coverage. Consult with your insurance agent to determine if you have this coverage and assess your need for such coverage.

While a sewer backup rider or endorsement will cover damage to your home and belongings caused by a sewer backup, it will not cover the cost of repairs to your sewer lateral. Private companies offer warranties to protect homeowners against the repair cost of their privately-owned sanitary service lines. In 2013, the City issued a Request for Proposals and selected, Service Line Warranties of America (SLWA), to offer homeowners that are customers of the Madison Sewer Utility access to optional warranty coverage. If an enrolled customer's sewer line leaks, breaks or clogs, Service Line Warranties of America has a 24-hour hotline and will dispatch a local, licensed plumber to perform the necessary work. This is NOT a City program, but rather SLWA is a program partner. As such, SLWA is solely responsible for the administration and service of the warranty programs. More information on this program is available at [www.SLWofA.com](http://www.SLWofA.com).

#### Risk Assessment

The likelihood of a problem with your sewer lateral is dependent upon the age of your line, material, number of trees in vicinity of the line and amount of routine maintenance that takes place. Older, clay and cast iron sewer laterals are more prone to root intrusion and deterioration resulting in breaks than newer PVC (plastic) laterals. Homes built after 1980 typically have PVC laterals and are less susceptible to these issues. Homeowners are advised to assess their risk and their risk tolerance in deciding whether or not to purchase warranty coverage.

#### Future Options

The MSU is currently evaluating various options to protect customers from the economic hardship a sewer lateral repair can cause. Complete our online survey at [www.surveymonkey.com/r/Sewer\\_Lateral\\_Survey](http://www.surveymonkey.com/r/Sewer_Lateral_Survey) to provide us with your ideas.

## How to Handle Fall Leaf & Yard Waste

by Maddie Dumas and Phil Gaebler, Engineering Division

The easiest way to manage leaves is to mow them directly into your lawn with a mulching lawn mower. This works well for yards with light leaf cover and helps to improve your lawn's soil.

For heavier leaf cover, leaf mulching is an option to aerate and improve soil nutrient content while providing temperature and moisture insulation. Leaf mulching also prevents excess nutrients from washing into our lakes.

Three products can be made with leaves: mulch, leaf mold and compost. Raking and piling leaves around the base of trees or over garden beds is the simplest way to mulch. Leaf mulch can be piled as high as a foot. It will compress into a flat, dense material known as leaf mold. This nutritious product can last for 2-3 years, suppress weeds and retain soil moisture levels. Leaf compost can be made in as little as six months by finely shredding leaves with a lawnmower or weed whacker, then layering with grass clippings, green compost, or manure. Turning the mixture every three weeks and/or covering with plastic to trap heat and moisture will speed decomposition.

Beware of mulching leaves infected with disease. Place diseased foliage in a pile or in a bag on your terrace for the City to pick up.

For more information about leaf collection, the drop-off sites and composting, visit [www.cityofmadison.com/streets](http://www.cityofmadison.com/streets).



Mow leaves directly into lawn

## Japanese Knotweed: City Works to Eradicate Noxious Weed

by Maddie Dumas, Engineering Division

Japanese knotweed is a highly aggressive perennial invasive that can take root in property foundations, driveways and roads. The damage it causes can lower your home's value and influence your chance of getting a mortgage.

Japanese knotweed can reach massive proportions with heights of up to 13 feet, roots growing 9 feet deep, and up to 60 feet wide. Shoots can sprout at any point along their length allowing the plant to grow quickly into dense stands. It grows on hollow, bamboo-like stalks that have mottled, reddish tinge when young, and a whitish coating when mature. Stems have a zig-zag pattern and can be red or green. Leaves are oval-shaped with pointed tips, flat bases and smooth edges. Small, creamy white flowers are held in upright spikes during boom in August-September.



Japanese Knotweed

Control of Japanese knotweed is extremely difficult. A multi-pronged approach involving cutting, treating with herbicide, and digging over the course of several years is needed to eradicate an invasion. The City of Madison has listed Japanese knotweed as a "noxious weed," therefore prohibiting it on all property. Property owners can contract with a private landscaping firm to provide treatment. For more information on how to treat, or if you see Japanese knotweed on public or private property, contact Maddie Dumas, Greenway Vegetation Coordinator at (608) 266-9525, [mdumas2@cityofmadison.com](mailto:mdumas2@cityofmadison.com).



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KEEP STREETS LEAF-FREE**

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