

# AMENDED

## AGENDA

### CITY OF STURGEON BAY COMMUNITY PROTECTION & SERVICES COMMITTEE

Thursday, November 5, 2020

**4:30 p.m.**

Council Chambers, City Hall – 421 Michigan Street

1. Roll Call
2. Adoption of Agenda
3. Approval of Minutes from October 1, 2020
4. Public Comment on Agenda Items
5. Public Hearing: Request from Michael Wright to operate a taxicab in the City of Sturgeon Bay DBA Tru-Way Transport.
6. Consideration of: Request from Michael Wright to operate a taxicab in the City of Sturgeon Bay DBA Tru-Way Transport.
7. Public Hearing: Request from Michael Wright to operate a shuttle service in the City of Sturgeon Bay DBA Tru-Way Transport.
8. Consideration of: Request from Michael Wright to operate a shuttle service in the City of Sturgeon Bay DBA Tru-Way Transport.
9. Consideration of: Emergency Warning Sirens
10. Consideration of: Snow and Ice Control Policy
11. Consideration of: Chapter 2 – 2.01 The Common Council
- 12. Consideration of: City Ordinance 10.175 – Drinking on Public Property**
13. Adjourn

NOTE: DEVIATION FROM THE AGENDA ORDER SHOWN MAY OCCUR

Notice is hereby given that a majority of the Common Council may be present at this meeting to gather information about a subject over which they have decision-making responsibility. If a quorum of the Common Council does attend, this may constitute a meeting of the Common Council and is noticed as such, although the Common Council will not take any formal action at this meeting.

Posted:

Date: 10/30/20

Time: 9:30 a.m.

By: SSO

Committee: Community Protection & Services

Dan Williams, Chr.

Kirsten Reeths

Seth Wiederanders

## **COMMUNITY PROTECTION & SERVICES COMMITTEE**

**October 1, 2020**

A meeting of the Community Protection & Services Committee was called to order at 12:30 p.m. by Chairperson Williams in the Council Chambers, City Hall. **Roll Call:** Members Ald. Williams, Ald. Reeths and Ald. Wiederanders were present. Also present from City Departments were Mr. VanLieshout and Chief Dietman.

*Moved by Ald. Wiederanders, seconded by Ald. Reeths to adopt the following amended agenda:*

1. Roll Call
2. Adoption of Agenda
3. Approval of Minutes from September 2, 2020
4. Public Comment on Agenda Items
5. Consideration of: Request from Michael Wright to operate a taxicab in the City of Sturgeon Bay DBA Tru-Way Transport.
6. Consideration of: Request from Michael Wright to operate a shuttle service in the City of Sturgeon Bay DBA Tru-Way Transport.
7. **Discussion of: Emergency Warning Sirens**
8. Consideration of: Chapter 2 – 2.01 The Common Council
9. Adjourn

*All Ayes. Carried.*

### **Approval of Meeting Minutes**

*Moved by Ald. Williams, seconded by Ald. Reeths to approve the September 2, 2020 minutes. All Ayes. Carried.*

### **Public Comment**

None.

### **Tru-Way Transport**

Michael Wright: 629 Tru Way Road, Brussels

Mr. Wright presented to the committee his desire to operate a non-emergency medical transport company in the City of Sturgeon Bay. His taxi/shuttle service would be a 24-hour 7-days-a-week operation, by appointment.

*Moved by Ald. Wiederanders, seconded by Ald. Reeths, to deem Tru-Way Transport a necessity in the City of Sturgeon Bay, and hereby schedule a public hearing on Thursday, November 5, 2020 at 4:30pm in the Council Chambers. All ayes. Carried.*

### **Emergency Warning Sirens**

According to Chief Dietman, the City has 7 warning sirens. The sirens are meant as warnings to people outdoors. They do not have a battery back-up, if power is lost the sirens will not operate. Cost to replace a single siren is around \$30,000. These systems

are becoming antiquated; majority of rural communities no longer maintain sirens. Smart phone notifications and weather radios are more commonly used.

Public notice of a transition to not having sirens will be considered. Possible ideas include using social media, public relations and a possible weather radio campaign. A county-wide plan will be discussed next meeting on how to do this.

*No action. Bringing back to next meeting for consideration.*

### **Chapter 2 Ordinance**

Ordinance updates were proposed to Chapter 2 – 2.01 The Common Council and discussed.

*No action. Bringing back to next meeting with changes for consideration.*

*Moved by Ald. Wiederanders, seconded by Ald. Reeths, to adjourn the meeting of the Community Protection Services Committee. All ayes. Carried. The meeting was adjourned at 1:21 p.m.*

Respectfully submitted,

Sarah Spude-Olson  
Police Department Office Manager

## Dietman, Tim

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**From:** KANE, DAN  
**Sent:** Friday, October 9, 2020 9:39 AM  
**To:** Dietman, Tim  
**Subject:** Tornado Sirens  
**Attachments:** Wisconsin outdoor warning siren best practices release copy.pdf; Endorsement Letter for statewide Siren Guidance - May 2019.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Tim,

I have some resources here that I think will really help you on your local discussions around sirens. Attached are a letter from the Wisconsin Emergency Management Association supporting the other attached document which is a best practices document created in 2019 on siren use. If you were to keep your sirens active, this best practices document lays out a standard way to do it so it is consistent around the State. I also have a news story link here that goes through the issue:

Link to news story: <https://www.cbs58.com/news/tornado-siren-confusion-new-initiative-to-create-unified-best-practices-for-warning-sirens-underway>

My opinion on sirens is that they were a good tool before we got the technology upgrades we have today. I think it is just one small piece of a larger public warning puzzle and studies have shown that sirens are not as effective as they once were. I think in this digital age, Wireless Emergency Alerts (WEA) alerts along with weather radios and other media platforms are a much better way to get a message out that sirens. This is not to say that sirens are a bad thing, but it all comes down to setting expectations. People will more often than not, hear a siren and then look for additional information to confirm the emergency, rather than take action right away. For these reasons, it is my belief that more can be done in the way of education and promoting all other forms of public information and warning systems as they can be easier to understand, can be shown to come from a reliable source, are not a test or mistake. In talking to other EM's around our area and the State they want nothing to do with siren ownership or maintenance at the County level as it is too costly and not as effective as these other methods. Case study being the nuclear power plant down in Manitowoc County. According to their director of EM they are looking to get rid of their sirens and move to WEA alerts for these and other reasons.

I hope this helps and let me know if there is anything else I can assist with in this effort.

Thank you,



**Daniel Kane**

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# WISCONSIN OUTDOOR WARNING SIREN BEST PRACTICES



1/31/2019

Recommendations for best practices

To create best practice recommendations for outdoor warning sirens to improve public safety and public warning effectiveness in Wisconsin by encouraging statewide adoption of one simple, clear, consistent and credible outdoor warning siren policy.

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# Wisconsin Outdoor Warning Siren Best Practices

## RECOMMENDATIONS FOR BEST PRACTICES

### Background

Outdoor warning sirens are just one tool used by officials to warn the public of an immediate threat to life safety from hazards and threats. Outdoor warning sirens, also known as air raid or tornado sirens, were originally designed to warn the population of large cities to seek shelter in the event of incoming enemy bombers during World War II. The siren system was later upgraded and expanded during the Cold War for warning of incoming missiles by the Federal Civil Defense Administration (FCDA) Act in 1950. During the Nixon administration, there were several significant natural disasters including Hurricane Camille in 1969 that put the Federal Government under pressure to allow the use of the outdoor warning sirens already in place to be used for more than bomber or missile attack warning. The earliest documented use of an outdoor siren to warn of a tornado is 1970. Sirens in Wisconsin have been used to warn people primarily of tornados but there are several types of dangers that the siren systems in a given area or municipality may elect to use the siren system for.

### Public Warning System

Outdoor warning sirens should be just one element in an integrated public warning system that uses many methods to provide immediate, potentially life-saving warning and actionable information to the public as quickly as possible. Other elements of this integrated public warning system include the National Oceanic and Atmospheric Administration's (NOAA) Weather Radio (NWR); Broadcast radio, Broadcast television, and Cable TV providers that participate in the Emergency Alert System (EAS), Wireless Emergency Alert (WEA) systems, Telephonic notification services (Reverse 911), and digital message boards along highways. **No single piece of public warning technology is capable of alerting all people at all times.** People engage in various activities throughout the day and these warning tools may, or may not, be effective for reaching an individual at any particular moment. Having a variety of warning tools provides redundancy and resilience against failure of key systems such as cell phone towers, the internet, or electrical service; which happens often when disaster strikes.

### Siren Organization

Outdoor warning sirens in Wisconsin are not part of a centralized statewide system. Siren site selection, equipment choice, installation, maintenance, upgrades and funding are typically the responsibility of municipalities, counties and in some cases, private ownership. In rare instances, special jurisdictions such as major airports, private corporations and nuclear power plants, own and operate sirens. Siren policies have never been coordinated in Wisconsin in part due to Wisconsin's Home Rule status. Policy scope in Wisconsin ranges from operators that own a single siren, to city-wide policies, to county-wide policies. Due to the variety of siren equipment used and differences in organization and capabilities between jurisdictions, siren activation methods vary. Some sirens must be manually activated at each location. Other siren networks are automated and can be activated from a single control point which is often a Public Safety Answering Point (PSAP) or Dispatch Center. The result has been that vital public warning signals are very different across the state and can and have created warning conflict in or near community, county and even state borders.

## Siren Capabilities

Outdoor warning sirens are tools to warn people who are outdoors to take immediate, potentially life-saving action by finding shelter from an imminent threat, then seeking further information. Though some people who are very close to an outdoor warning siren may hear it while they are inside a building, the sirens are designed and only intended to warn those people who may be outside during a potential threat. Older siren systems are mechanical while many newer varieties are electronic. Either type works well to provide outdoor warning. The planning range for hearing most outdoor sirens is  $\frac{1}{2}$  to 2 miles from the siren location. In addition to differences in sirens models, many other factors may increase or decrease the distance over which the sound may carry including wind, vegetation, hills, buildings and other noise in the area such as highway road noise.

## Siren Education

Most outdoor warning sirens now in use in Wisconsin do not have the capability to provide a voice message. Even when voice messages can be provided, siren tones carry across much further distances than an amplified human voice. Therefore, people need to know what to do when they hear a siren tone without any further explanation. Public education is an essential component of a successful outdoor warning siren capability. If people are unaware of what action to take when a siren sounds, some will seek shelter, others will run, and still others will stick around to find out what is going on. In the absence of any specific guidance provided for a special circumstance, emergency managers in Wisconsin want the public to immediately move to shelter when outdoor warning sirens are heard, and then get information from a reliable source about the threat. People should always “get inside, then get information” when sirens sound. Education about sirens and other warning methods reduce public confusion, which is a major contributor to inappropriate and possibly fatal actions when disaster strikes.

## Situational Awareness

Another important part of public warning, especially with outdoor warning sirens, is situational awareness. Situational awareness is different than just knowing what to do when a siren sounds. Situational awareness is making sure people are aware of the increase and decrease of hazards and threats over days and weeks. This is especially important during severe weather season in our state.

Advances in technology and the skill of National Weather Service (NWS) meteorologists mean that typically there are days of indications that severe weather will form. This information is outlined in the Hazardous Weather Outlook from the NWS office for your area. Furthermore, there are often hours of notice that the development of dangerous weather is imminent such as; when Severe Thunderstorm or Tornado Watches are issued by the Storm Prediction Center. Finally, there are usually only minutes of warning to take shelter when a Severe Thunderstorm or Tornado Warning is issued by the local National Weather Service offices.

Citizens should understand that sirens are the last link in the warning chain, not the first. A very small investment of a few minutes of time each day can ensure proper situational awareness and better decision-making for the safety of families, groups and businesses. People should take a moment to check weather forecasts daily for any mention of severe weather. Extra attention should be paid on days with severe weather potential. Situational awareness prevents surprise. Surprise often causes unnecessary delay in taking appropriate life-saving action – sometimes with tragic results.



## Siren Operation Issues

While outdoor warning sirens are useful, siren owners can be much more effective with their implementation as part of an overall public warning strategy. Simple policy updates and changes statewide would make sirens more trusted as a warning tool and improve public safety without requiring expense. Recent studies about public reactions to outdoor warning sirens in such deadly tornado events as Joplin, Missouri (2011); Tuscaloosa, Alabama (2011); and Moore, Oklahoma (2013), show that many people don't trust sirens to be accurate, and therefore, do not take shelter when they hear them. Instead, many begin to call or text friends and family when sirens are activated to verify conditions and discuss options before taking any further action, yet others will dial 911 looking for information or complaining that the sirens have sounded. These studies show that overuse of sirens leads people to ignore them, a condition known as "siren fatigue". Overuse includes testing them too often, using sirens for non-warning reasons, such as for lunch/dinner signals, curfew sirens and fire department member alerting. People have difficulty sorting out all the sirens they hear and tune them out from frustration and annoyance. Another problem happens when sirens are sounded in too large of a geographical area when the hazard is only threatening a small portion of the area. People far from an actual threat may think everything looks fine, but have sirens activated near them. These so called 'blue sky warnings' do not match the smaller polygon warnings that are now possible and in wide spread use. This produces a lack of confidence in outdoor warning sirens and results in a lack of urgency when they are heard.

## Intent of this Best Practice Recommendation Document

The siren workgroup is striving to create best practice recommendations for outdoor warning sirens in order to improve public safety and public warning effectiveness in Wisconsin by encouraging voluntary statewide adoption of simple, clear, consistent and credible outdoor warning siren policy and practice. This will help foster a statewide understanding of the purpose of outdoor warning sirens among emergency personnel, our media partners and the public we serve. It also describes a standard way to employ them across our state. We are working reduce public confusion and a reduction in, or elimination of siren fatigue. These steps should lead to increased confidence and trust in public warning systems in general and sirens in particular.

These recommendations are offered for the use of emergency managers and municipal officials as guidance to help influence local siren policy and practice decisions. It is not the intent of the workgroup for these recommendations to be mandatory.

As a Home Rule State the ownership, maintenance, operational decisions and control lie with the local jurisdiction. The workgroup is striving to develop and promote a siren policy and practices we believe will promote a safer and more resilient Wisconsin. These best practice recommendations are, therefore, goals that we encourage jurisdictions to work towards.

It is not the intent of this group to make these recommendations to suggest implementation of an enforceable statute or rule. The recommendations represent the professional judgment and advice of emergency managers throughout Wisconsin, together with meteorologists' input from the National Weather Service and from our Media Partners. Together, we believe this is the most appropriate approach for strategizing outdoor warning siren use and improving public warning in hazardous weather events.

## Legal Authority

Wisconsin has no statute or administrative rule that dictates the use, ownership, maintenance or requirement that any municipality, city, village or township must have sirens or follow any common practice or procedure. As such it is a home rule issue and is completely left to the individual local unit of government to decide if they will have and operate outdoor warning sirens and under what conditions and criteria.

Thus making the need for clear and concise guidance for statewide dissemination to encourage voluntary acceptance and use even more apparent.

## Principles

In order to move toward one simple, clear, consistent and credible outdoor warning siren policy for Wisconsin, the following overarching principles are recommended as best practice.

### Protection of Life

The sole purpose of outdoor warning sirens is for the protection of life.

Sirens should be used to warn of immediate threats to life and safety. They should not sound when the predominant hazard is for property damage. They also should not be used for any non-life safety purpose such as time-of-day notification ("noon siren") or for celebratory reasons (welcoming a winning sports team home).

### Public Warning

In order to reduce confusion, outdoor warning sirens should be sounded for public warning purposes only. Using outdoor warning sirens for calling firefighters to the station can result in public confusion because these sirens do not fit a predictable pattern. While using sirens to alert volunteer firefighters is traditional and has a life-safety objective, technology improvements make siren alerts to firefighters less and less effective or necessary. Many fire departments in Wisconsin have phased out sirens for firefighter recall. The practice of using sirens for fire calls has also dropped dramatically across the United States. Use of sirens for non-public warning purposes as a practice should be phased out.

### Take Shelter

The public should know that hearing an outdoor warning siren is a call to take immediate life-saving action. The desired action is to take shelter.

Shelter does not just mean going inside any structure or vehicle. It means finding a sturdy, permanent building in a place that offers the best possible protection. The phrase "get inside then get information" are memorable words to describe the essential actions that people should take when they hear an outdoor warning siren.

There are a very few special circumstances in small areas where sirens may mean something else (described later). If people have no other information however, they should always take shelter when hearing a siren.

Public education must also go further to give people the ability to identify the most protective areas in buildings.

## All Hazards

Outdoor Warning Sirens are not “tornado sirens.” Sirens may be used for all types of hazards where emergency officials want people in a defined area to “get inside then get information.”

Besides severe weather, other situations such as the release of hazardous materials or an immediate security threat may require that sirens be used to tell to people take shelter. Outdoor warning sirens are also an important part of the National Alert and Warning System (NAWAS) that warns of imminent attack and other national security emergencies. These uses need to be accompanied by a well thought out policy/procedure and significant efforts in public education so residents in these “All-Hazards” use area know the differences in siren alerts and the actions they should take

## Multi-Mode Warning

Sirens are just one element in a larger public warning system. No single warning element is effective at all times and in all circumstances. Many tools must be used to make sure that people get proper timely warning to take shelter or other appropriate action dictated by the hazard. Outdoor warning sirens are the tool of choice to warn those people who are outside to seek shelter then information.

According to a recent national survey, 20.9% percent of Americans prefer outdoor sirens as their method to get warning<sup>1</sup>. This data shows a fundamental problem in perception of sirens and of public warning in general.

Warning method is not a matter of favorites, but instead is a function of the activity a person is doing at the time of the warning. Sirens warn those outside. Television screen crawlers warn those watching TV. Digital message boards and radios warn those driving. Weather alert radio awakens those who are asleep or warn those doing work inside a home or office. Wireless Emergency Alerts warn those who are mobile and maybe outside of their local area. People always should have and need several warning systems available to them as they go about their day. As people go about their day, they should always have access to at least one of these warning systems.

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<sup>1</sup> 2012 Third Annual Public Safety Survey – [http://www.federal-signal-indust.com/sites/default/files/attachments/ANS104\\_2012\\_Survey-lowRes.pdf](http://www.federal-signal-indust.com/sites/default/files/attachments/ANS104_2012_Survey-lowRes.pdf)  
Outdoor Warning Siren Best Practices Recommendation

## OPERATIONAL STANDARDS RECOMMENDATIONS

Specific recommended operating standards and best practices for outdoor warning siren use in Wisconsin:

### *Two Siren Tones*

There are two basic sounds or tones used by outdoor warning sirens; 1) Alert and, 2) Attack.

1. Alert is a steady 'wail' tone
2. Attack is a rising and falling 'wavering' tone

These long-established tones are a national standard under a system established by the Federal Government. Across Wisconsin, the public should only have to understand the meaning of two separate siren sounds. Any other tones used are only for very specific circumstances inside small and often restricted areas (discussed later). People should understand that some jurisdictions are currently only able to offer the alert tone for public warning. It is also important to know that some fire services utilize siren signal to notify firefighters of a call.

**Best Practice Recommendation:** Jurisdictions that operate outdoor warning sirens should attempt to have both the alert and attack tones available for public warning. The alert tone should be used for local emergency warning i.e.: Tornado/Extreme winds or nuclear plant emergencies. The attack tone should be reserved only for national defense warning. According to the National Warning System Operations Manual, the attack signal "...will have no other meaning and will be used for no other purpose."<sup>2</sup>

<sup>2</sup> FEMA Manual 1550.2: National Warning System Operations Manual – [http://www.fema.gov/pdf/library/1550\\_2.pdf](http://www.fema.gov/pdf/library/1550_2.pdf)

### *Use in Local Emergencies*

Local emergencies that may require siren activation include, but are not limited to dangerous weather events such as tornadoes or extreme winds; deadly chemical or hazardous material releases; or certain active security situations. The message that emergency officials want to communicate to the public by using outdoor warning sirens is to find protective shelter, using the catch-phrase "get inside then get information."

**Best Practice Recommendation:** When used for a public warning of local emergency, outdoor warning sirens should sound the alert tone only. During use for an actual warning (as opposed to a test), the duration of the alert tone should be at least three (3) minutes. There is strong evidence that people take siren warning more seriously if the siren is sounded for a longer duration, or if the tone is quickly repeated. Public education on what actions are to be taken when sirens are activated is key.

## ***Weather Triggers***

There are several types of extreme weather that should trigger activation of outdoor warning sirens (and many types that should not). Quick and effective use of sirens is especially important during violent weather events since sirens are designed to warn people engaged in outdoor activities. People outdoors are the most vulnerable to the impacts of weather. Use of sirens for weather warnings should be for a clear and present danger to life-safety. Of course, inclement weather can increase safety risks that may result in death or injuries. Slippery roads, standing water, lightning and other dangers are often part of storms. People should adjust their activities and come inside, but activation of sirens for general public warning is not appropriate for routine storms. Siren activation should only take place when the effects of weather would likely kill or injure unprotected people outdoors or hurt people in lightly constructed structures such as mobile homes, campers, etc. When sirens are activated, protective action does not just mean going inside any object structure, but actually finding safe shelter within structures or leaving unsafe structures (such as mobile homes) and vehicles and then finding good, solid protective shelter.

### **Best Practice Recommendation:**

Two types of violent weather events should trigger siren activation using the alert tone. These include: Tornadoes and Extreme winds.

1. Tornadoes (NWS tornado warnings)
2. Extreme Winds (NWS measured or imminent at or above 80 MPH.)

People in structures such as mobile homes, are also at risk for significant damage above that wind speed. Sirens should not be sounded for basic severe thunderstorm warnings because the NWS severe thunderstorm threshold is set for property damage.

In addition, severe thunderstorm warnings occur so frequently across Wisconsin that siren activation would likely happen many times each year, eroding public confidence in sirens and resulting in people ignoring sirens and not taking individual protective actions quickly enough.

The sounding for Extreme Wind (80mph +) can be a logistical and procedural challenge. There are no current reliable automated methods other than an anemometer activated siren to perform the function of setting off the alert. Most jurisdictions would have a dispatcher or emergency manager reading the texts of an NWS weather warning product for the indicators of the extreme wind conditions. These extreme winds of 80 mph or higher can and do cause the same damage and injury/fatality potential as tornadoes. Future development of alerting technology may make this more prevalent in the future and jurisdictions should always strive to provide the most complete warning information as possible

### ***Use in National Defense Emergencies***

There are several scenarios where national authorities may decide to warn the public directly through the National Alert and Warning System (NAWAS) as well as the Wireless Emergency Alert (WEA). Attack warning was the original purpose of the nation's siren system. In the event of an imminent attack State and County Warning Points will be notified on the NAWAS line to sound the "attack" warning under the four specified circumstances as well as other circumstances of national interest. These procedures are spelled out in FEMA Manual 1550.2 published in 2001 and revised in 2015.

**1. Enemy Attack.** The Attack Warning will be disseminated over NAWAS when the Commander, North American Aerospace Defense Command (NORAD) declares Air Defense Emergency (ADE) Warning RED. ADE RED signifies that an attack upon the United States is imminent or taking place. Only NORAD is authorized to declare ADEs. Additionally, there are limited threat scenarios by which terrorists or countries of concern may attempt to harm U.S. interests. These scenarios may require an announcement of a limited Attack Warning to a specific area or region of the United States. Warnings are based on tactical and strategic intelligence data gathered and evaluated by NORAD under its responsibility for the aerospace defense of North America.

**2. Accidental Missile Launch.** An agreement between the United States and Russia exists to reduce the risk of nuclear war because of an accidental, unauthorized, or any other unexplained incident involving a possible nuclear weapon detonation. In the unlikely event of such an incident (e.g., an accidental missile launch) that would threaten the United States or a particular area within the country with a possible nuclear detonation, an accidental launch-warning message will be transmitted over the NAWAS. The attack warning tone would be used.

**3. Radioactive Fallout.** NAWAS would be used to convey fallout information to the affected State(s). The State(s) would then pass this information on to local governments, which would issue fallout warnings and instructions to the public based on local observations and information received from the State. The attack warning tone would be used.

**4. Domestic Errant Missile Launch.** The United States space program launches a variety of missiles (military, government and civilian) from several launch locations within its borders. There is potential for these missiles to go errant and not reach proper altitude in outer space but instead fall back to Earth. The rocket launch facility, in conference with NORAD, which monitors all orbital activity, would issue a warning via NAWAS to the threatened state's warning point. States would then pass this information to affected local governments, which would sound the attack tone and issue instructions via media and other sources.

**Best Practice Recommendation:** Counties and siren owner/operators participate in, and support, the NAWAS system by maintaining the capability to sound attack warnings for public safety in case of national defense emergency. While national defense emergencies are low probability, most carry high consequences and would likely result in many more casualties if the public did not get adequate advance warning.

### ***Smallest Warning Area Possible***

Siren control technology used in some places in Wisconsin is unable to sound sirens in areas smaller than the entire county or municipality. This results in so-called 'blue sky warnings.' A blue sky warning happens when the public warning area where sirens sound is much larger than the actual area under threat and results in people losing trust in siren accuracy and ignoring warnings.

**Best Practice Recommendation:** When repaired, upgraded or replaced, siren controls should be equipped with technology or systems to allow only sirens within a specified NWS warning polygon to sound. Additional technology advancements that allow automatic siren activation upon receipt of a NWS tornado or wind message for pre-set conditions should also be considered.

### ***Siren Resilience***

Severe weather can quickly make outdoor warning siren systems fail if it is totally dependent on the local power grid as its only power source. Power failures can happen well before a storm hits an area. Lightning or fallen trees can cut power and make critical outdoor warning sirens silent just when an area needs it most. Severe weather often comes in waves over the course of hours, or even days. If the first storm knocks out power resulting in warning sirens going off line, the public is at risk when new lines of storms approach.

**Best Practice Recommendation:** To ensure function during critical situations, outdoor warning sirens should not depend on the power grid as their sole source of power. Backup power sources should be installed, including battery back-up, or connection to a generator that automatically starts when the grid power source shuts off. Consider future sirens that are not connected to the grid at all and are capable of independent power through use of solar charged batteries or other power systems.

### ***Siren Control System***

Siren Control systems can vary greatly due to age. Redundancy in siren controls as well as protection of those systems from cyber or physical attack or tampering must be addressed.

**Best Practice Recommendation:** To ensure function during critical situations, outdoor warning sirens systems should include at least two control points for sounding or canceling of the siren activation.

**Best Practice Recommendation:** Outdoor warning siren control systems should be protected from physical tampering as much as is possible. As well control systems using radios as control should use encryption methods to prevent the remote hacking of sirens.

***“All-Clear” Message***

A frequent question asked of emergency managers by the public is “what is the all-clear siren tone?” Of course the answer is that there is NO “all-clear” tone. The mistaken belief that there is such a signal comes from the all clear signal used to tell people that they could come out of bomb shelters after enemy bombers had passed in London during World War II. The all clear tone dropped from use in Civil Defense when bombs became nuclear and radioactive fallout became a concern. For weather events and hazardous material emergencies, the idea that there is an “all-clear” tone is dangerous. The “get inside then get information” concept is supposed to have people move inside to sturdy shelter and then connect with an information source, such as radio and TV. The all clear will come from broadcasts and other sources while people remain in the sheltered location. People should not leave a safe shelter spot in an attempt to hear an all clear siren tone outside that is supposed to tell them it is OK to leave shelter. It is unsafe practice that may potentially put people in danger.

**Best Practice Recommendation:** Outdoor warning siren policies should not include any form of “all-clear” signal.

***Inappropriate Use of Sirens***

There are siren practices that are inappropriate, such as celebrating a sport team winning a championship. The use of the outdoor warning siren system to celebrate an event such as a sports teams win, the welcome home of a local or national hero or the signal as a start of a parade should be absolutely prohibited. This is comparable to pulling a building fire alarm to celebrate an event.

The use of outdoor warning sirens for calling firefighters to the station is a use that should be phased out if still in use. The advent of pager, radio, cell phone text and automated call alerts has rendered this practice obsolete. Given that the average warning siren has an alerting range of 1.5 miles, outside and the fact that few of our firefighters tend to live or work within that strict range is an indication of why this practice is not recommended. The use of the sirens in this way can and does result in public confusion and annoyance because these sirens do not fit a predictable pattern that the general public is aware of.

While using sirens to alert volunteer/Paid On Call firefighters is traditional and it does have a life-safety objective, technology improvements make siren alerts to firefighters less and less effective or necessary. Many fire departments in Wisconsin have phased out the use of sirens for firefighter recall. Using sirens for fire calls has also dropped dramatically across the United States.

**Best Practice Recommendation:** By policy and procedure prohibit the “Celebratory” use of outdoor warning sirens for any and all reasons.

**Best Practice Recommendation:** Phase out the use of outdoor warning sirens as standard practice for alerting Fire and Emergency Medical Services to respond. This should be done as soon as is practical based on the alerting technology that is available to the individual departments.



## **Siren Tests**

### **Monthly Tests**

Monthly siren tests have several purposes. These include verification that the siren is functioning, enabling listeners to learn the sounds used by outdoor warning sirens, and providing a trigger for immediate action drills by people at home, work, school or other sites. It is important that people in listening range of outdoor warning sirens fully understand the intent behind monthly siren tests. Some cities depend upon resident reports to find out if a siren does not work. People in these locations should know that they are expected to notify the siren owner when it does not work during a test. Information about siren tones and family and workplace immediate action tests are also essential to getting full value from the siren system.

**Best Practice Recommendation:** Public education efforts should make it clear that siren tests are provided as a way for people to become familiar with the siren tones that they will hear for warning. They should learn how siren sounds carry to their yards, worksites, parks, playing fields, lakes and other outdoor spaces in various weather conditions. They should be given tools to have a brief home, workplace, school or outdoor recreation action test when sirens are heard. During these tests people can actually move to a place of shelter, or they can do a quick mental assessment of what they would do in an actual emergency. If people are expected to report siren outages, they must be provided contact methods to do so. Surveying field units in the jurisdictions where sirens have been tested to ensure the audible alert was heard is also another way to verify functionality of the sirens. Always defer to the testing recommendations of the siren manufacture for the frequency of testing.

### **Conduct of Monthly Tests**

Siren operators must balance several demands during siren tests. Sirens must be tested to verify that they work. The test also satisfies the need to provide the public with opportunities to hear sirens before an actual emergency. The tests can also provide a trigger for brief action tests for people to practice protective measures. Too many tests, especially when combined with non-public warning uses of outdoor sirens such as time notifications and fire calls, result in siren fatigue. In siren fatigue, people have become numb to siren sounds and their attention is no longer secured when a siren is activated. Siren tests must be limited to only those needed to meet objectives in order to not build siren fatigue among the public.

**Best Practice Recommendation:** A single audible siren test protocol used across the state will help reduce public confusion and familiarize people with tones they will hear in an emergency. Best practice recommends one monthly audible siren drill. This drill should occur at the same time and day of each month. (Time and day should be coordinated countywide as well as with neighboring counties) The goal for outdoor warning siren capability in Wisconsin is to offer a single one-minute siren tone to test and educate populations.

### ***Test Day Severe Weather Threat***

During severe weather season there is a good chance a siren test may occur on a day with actual severe weather risk. Siren operators do not want to be in a position where a monthly siren test is happening while actual severe weather is building in the same area. This kind of siren purpose conflict would only erode public confidence in the siren system and in government decision-making. Looming severe weather or other developing emergency situations are appropriate reasons to cancel siren tests in order to reduce public confusion. Cancellation also reassures people that officials are actively monitoring developing situations and making appropriate adjustments when needed.

**Best Practice Recommendation:** If, on the day of the siren test, the National Weather Service forecasts a threat of actual severe weather in a specific county or counties, to occur within the six (6) hours prior to and through the six (6) hours following the siren test scheduled time, the test should be cancelled in the county/counties described in the forecast. The six hour minus - six hour plus window allows time for variance in predicted storm development times and for counties with large geographic areas. Local media outlets should be advised that the test is cancelled due to an actual severe weather threat. This not only will notify the public of the cancelled test, but is also another newsworthy method to highlight to the public the increased severe weather risk for that day. Cancellation of the test should be announced to the public.

### ***Annual Statewide Tornado Drill***

Wisconsin Emergency Management coordinates a Statewide Tornado Drill each year in April as part of Wisconsin's Severe Weather Awareness Week. This is a valuable public education effort that gets a lot of concentrated media attention across the state in the weeks just before the onset of severe weather season in Wisconsin. These tests are also aligned with neighboring states to provide cross border consistency. The use of outdoor warning sirens during an afternoon and an evening tornado warning scenario is important to the success of the education effort.

**Best Practice Recommendation:** Actively participate in Wisconsin Severe Weather Awareness Week and use outdoor warning sirens for the annual Statewide Tornado Drill held twice on the day of the test, one afternoon and one evening test

### ***Nuclear Power Plant Areas***

Wisconsin has nuclear power plants located in the state as well as in bordering states that have areas subject to special public alert and warning procedures. These areas include the 10 mile radius Emergency Planning Zones (EPZ) surrounding the plants. Siren procedures in the EPZ are governed by federal regulations.

**Best Practice Recommendation:** Outdoor Warning Sirens serving the 10 mile Emergency Planning Zones (EPZ) around nuclear power plants are considered special use sirens and are beyond the scope of these outdoor warning siren recommendations. If, however, these sirens are used for weather warning purposes, it is recommended that they follow the guidance provided within this document when activated for weather-related purposes.

### ***Voice Notification Systems***

Some outdoor warning sirens are also capable of providing a voice message when used as a loudspeaker. Generally, the audible range of a voice message is less than when using the speaker as a siren. Voice messages are able to provide more information than a simple tone, and can be much more specific about the threat and directive in actions to take.

**Best Practice Recommendation:** When used in a voice mode with a voice message, outdoor warning loudspeaker-sirens have a much more limited range. Use of the voice mode should be considered for specific area and venues such as fair grounds, marinas and outdoor sports complexes to direct people to shelter and action in an unfamiliar place. Use over a wide spread area has been shown to have limited effectiveness.

### ***Special Considerations***

There are special environments or circumstances when outdoor warning sirens have a public warning value when used in different ways than described in this best practice recommendation. However, the large benefit of simple and easily understood statewide standard siren practices will be lost if too many special exceptions are made. Emergency managers and siren owner/operators should use caution when thinking about exceptions to their siren policy. Public confusion could be the result.

A special environment for outdoor warning siren includes relatively small areas that have long-term, well-defined risk from a rapid onset emergency. A narrow ravine, for instance, which has homes or businesses within it, that is prone to flash flooding could be a special environment for outdoor warning sirens. The role of outdoor warning sirens in this limited case may be to trigger an evacuation (rather than to seek shelter).

**Best Practice Recommendation:** Warning sirens should not be used for general evacuation purposes. This conflicts with the idea that people should “get inside then get information” when they hear a siren. It is recommended that other notification methods be used such as public-address systems on fire trucks and police cars and/or Reverse 911, WEA or other subscription based alert and notification with consideration to repeat these messages on social media platforms. The use of Outdoor Sirens for evacuation signals should be a last choice and limited to very unique and special circumstances that cannot be effectively managed by other means. These areas require special attention to public education for understanding of the need for action and what those actions need to be.

## Public Education

Educating the public we serve as well as media partners and other public safety on the operations and limitations of outdoor warning sirens is a key component to a robust public alert and warning program.

The general public needs to understand the criteria used for sounding sirens and what actions to take when they hear a siren that has been activated. It is well established that people will seek three trusted sources of confirmation on a warning before taking action. That is why it is imperative that your siren program is NOT the only link in your public warning chain. It is also an indication that you must work through education and public relations to become their trusted source for alerting and notification to take life-saving measures.

Links:

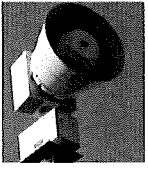
<https://www.fema.gov/media-library/assets/videos/102004>

Example of education info graphic:

**Outdoor Warning Sirens**  
**GET INSIDE!**  
**THEN GET**  
**INFORMATION.**

Severe weather can strike anywhere. Know where to seek shelter and actions to take



**WHAT YOU SHOULD DO WHEN SIRENS SOUND**



- 1** Stop activities! Pay attention to the warning.
- 2** Get Inside! Seek shelter in a sturdy enclosed structure or designated severe weather shelter.
- 3** Seek additional information. DO NOT CALL 911 for information! Listen to TV, Radio or seek information on cell phone apps and Internet sources.


**OUTDOOR WARNING SIRENS ARE TO ALERT PEOPLE THAT ARE OUTDOORS.**

Outdoor Warning Sirens are not designed or intended to alert people inside buildings. Have multiple ways to receive severe weather warnings

**WHEN A WEATHER WARNING IS ISSUED**

**GET INSIDE!**  
**THEN GET INFORMATION.**  
Don't go outside or by windows to video or take photos. Seek safe shelter in the basement or interior room without windows.



**Stay safe**

[www.facebook.com/ozaukeecountyEM/](https://www.facebook.com/ozaukeecountyEM/)

## *Thank You*

Thank you to the outdoor warning siren working group for their time and efforts to research and develop this guidance document.

Scott Ziegler  
Ozaukee County Sheriff's Office Division of Emergency Management

Gail Goodchild  
Waukesha County Emergency Management

David Janda  
Dane County Emergency Management

Special thanks to the National Weather Service Milwaukee/Sullivan office for their technical assistance with the weather science needed for this project.

The development of this document also relied on information from:

The Federal Emergency Management Agency (FEMA)  
The National Weather Service  
Wisconsin Emergency Management  
Wisconsin Emergency Management Association  
The State of Iowa Emergency Management  
The State of Michigan Emergency Management  
The State of Minnesota Emergency Management Association  
Federal Signal Corporation  
American Signal



December 2019

I am writing this letter to endorse the use of the Outdoor Warning Siren Best Practice document and encourage your counties and communities to adopt the best practices outlined and recommended in the report.

Outdoor warning sirens are part of an integrated public warning system, however, in Wisconsin there is NO centralized statewide system or standard. Currently in Wisconsin, outdoor warning sirens are owned and operated by many entities with very little policy and direction for use. The result the lack of standards has resulted in vital public warning signals being very different across the state, creating conflicts in public information and siren usage.

In 2016 a group of county emergency managers, the National Weather Service, meteorologists and media partners, met to form an Integrated Warning Team (IWT) for weather, one of the major points of discussion was the use of outdoor warning sirens. A small workgroup formed to work on gathering information on outdoor warning siren use in Wisconsin. The workgroup sent out multiple surveys to stakeholders and studied the use of outdoor warning sirens in other states. From their research, the workgroup created an outdoor warning siren best practice document. The intent of the document was to create best practice recommendations in order to improve public safety and warning effectiveness by encouraging voluntary statewide adoption of a simple, clear, consistent and credible policy and practice.

Voluntarily adopting and implementing the best practice recommendations will allow all communities to foster a statewide understanding of the purpose of outdoor warning sirens among emergency personnel, media partners and the public. A common standard for use will reduce public confusion and reduce siren fatigue, thus increasing confidence and trust in the use of sirens. The statewide adoption of the outdoor warning siren policy would give specific direction and allow for a clear public messaging, in order to effectively warn the public of imminent danger.

Thank you for your consideration and implementation of the Outdoor Warning Siren Best Practices in your communities. As always, if you have any questions or concerns, please contact your local or county Emergency Management Director.

Sincerely,

**Amy B. Nehls, President**

Contact Name: Tim Dietman  
Customer: Sturgeon Bay Fire  
Address: 421 Michigan St  
City: Sturgeon Bay  
Country: USA  
Office Phone: 920-746-2405

State: WI

Zip: 54235  
E-mail: [tdietman@sturgeonbaywi.org](mailto:tdietman@sturgeonbaywi.org)

Quotation No.: ANS  
100120150055  
Reference quote no. on your order

Upon receipt of your order and acceptance by Federal Signal Corporation, the equipment herein will be supplied at the quoted prices below.  
Delivery schedule cannot be established until radio information is supplied, if applicable.

October 1, 2020

Item No.	Qty.	Federal Model/ Part No.	Description	Unit Price	Total
1			Project Name		
2			Command and Control		
3	1				
4	1				
5	1				
6	1				
7	1				
8			Equipment		
9	1	2001-130	Electro-mechanical rotating siren, 130 db(C) 800Hz	\$7,682.00	\$7,682.00
10	1	DCFCBH	INFORMER15, POE+, RED LED	\$4,945.00	\$4,945.00
11	1	RP164	ANT,GROUNDING PLANE	\$152.00	\$152.00
12	1	AMB-RP164	ANTENNA MOUNTING BRACKET FOR RP164 POLE OR WALL	\$61.00	\$61.00
13	1				
14	1	10A3	CABLE, 25' PL259 MALE & ADPT	\$196.00	\$196.00
15	1				
16	1				
17	1				
18			Services/Installation		
19	1				
20	1				
21	1				
22	1				
23	1	ES-FREIGHT	SHIPPING FEES	\$521.44	\$521.44
Total Weight:				Total:	<b>\$13,557.44</b>

Prices are firm for 90 days from the date of quotation unless shown otherwise. Upon acceptance, prices are firm for 6 months. This quotation is expressly subject to acceptance by Buyer of all Terms stated in the attached Terms document, and any exception to or modification of such Terms shall not be binding on Seller unless expressly accepted in writing by an authorized agent or Officer of Seller. Any order submitted to Seller on the basis set forth above, in whole or in part, shall constitute an acceptance by Buyer of the Terms. Any such order shall be subject to acceptance by Seller in its discretion. If the total price for the items set forth above exceeds \$50,000 then this quotation IS ONLY VALID if countersigned below by a Regional Manager of the Safety & Security Systems Group, Federal Signal Corporation. Installation is not included unless specifically quoted as a line item above. Adverse Site Conditions, including rock, caving soil conditions, contaminated soil, poor site access availability, and other circumstances which result in more than 2 hours to install a pole, will result in a \$385.00 per hour fee, plus equipment. Trenching is additional. Power Clause, bringing power to the equipment is the responsibility of the purchaser. Permit Clause, any special permits, licenses or fees will be additional. See attached Terms sheet.

Delivery: 8-10 Weeks  
Freight Terms: FOB - University Park, IL (Factory)  
Terms: Equipment - Net 30 Days upon Shipment  
Services - Net 30 Days, as completed

Proposed By: Bill Van Dyn Hoven  
Company: Emergency Communication Systems  
Address: W971 County Road CE  
City, State, Zip: Kaukauna, WI 54130  
Country: USA  
Work Phone 920-585-4001  
Fax:  
Approved By: Bill VDH

Signature: *William Van Dyn Hoven*

**SHIPPING ADDRESS**

Contact Name: Bill Van Dyn Hoven  
Customer: Emergency Communication Systems  
Address: W971 County Road CE  
City: Kaukauna State: WI  
Country: USA

①



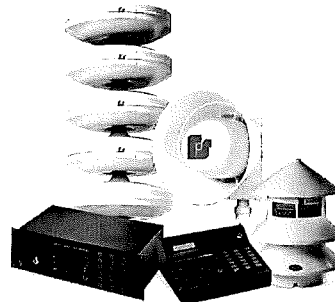
## Emergency Communication Systems

*Safety First*

W971 County Road CE  
Kaukauna, WI 54130  
920-585-4001

# Estimate

Date	Estimate #
10/1/2020	5429



Name / Address
Sturgeon Bay 421 Michigan St Sturgeon Bay, WI 54235

Description	Qty	Rate	Total
<ul style="list-style-type: none"><li>•Install (1) Federal Signal Siren per Federal Signal installation specifications at site approved by the city</li><li>•Furnish and install (1) 50 foot wooden class 2 pole</li><li>•Furnish and install 4 batteries as recommended by Federal Signal battery specifications</li><li>•Furnish and install electrical accessories for 120 vAC operation of siren</li><li>•Coordinate diggers hotline at siren site</li><li>•Program, Test and Optimize System</li></ul> Remove and dispose of old equipment and siren pole  City/Village is responsible for electrical utility cost (if any) for connecting the utility power or commercial power to the electrical disconnect installed by ECS at the pole, unless otherwise negotiated.  The following rock clause will apply: In the event that rock or any other obstructions are encountered while digging, work at the site will be discontinued until the City/Village can offer an alternate site that will not require unexpected expenses to Emergency Communication Systems such as the cost of rock removal.	1	5,375.00	5,375.00

①

### Total

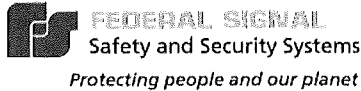
\$5,375.00

Phone #
920-585-4001

E-mail
Bill@Siren-Service.com

Web Site
www.EmergencyCommunicationSystems-ECS.com





2645 Federal Signal Drive  
University Park, Illinois 60484-0975  
800.548.7229  
alertnotification.com

Contact Name: Tim Dietman  
Customer: Sturgeon Bay Fire  
Address: 421 Michigan St  
City: Sturgeon Bay  
Country: USA  
Office Phone: 920-746-2405

State: WI

Zip: 54235  
E-mail: [tdietman@sturgeonbaywi.org](mailto:tdietman@sturgeonbaywi.org)

Quotation No.: ANS  
92920152756

Reference quote no. on your order

Upon receipt of your order and acceptance by Federal Signal Corporation, the equipment herein will be supplied at the quoted prices below.  
Delivery schedule cannot be established until radio information is supplied, if applicable.

September 29, 2020

Item No.	Qty.	Federal Model/ Part No.	Description	Unit Price	Total
1			Project Name		
2			Command and Control		
3	1				
4	1				
5	1				
6	1				
7	1				
8			Equipment		
9	1	FCH	FEDERAL CONTROLLER, HIGH BAND RADIO	\$1,678.00	\$1,678.00
10	1				
11	1	2001-AC	SIREN CONTROL, 2001AC	\$2,107.00	\$2,107.00
12	1				
13	1				
14	1				
15	1				
16	1				
17	1				
18			Services/Installation		
19	1				
20	1				
21	1				
22	1				
23	1	ES-FREIGHT	SHIPPING FEES	\$151.40	\$151.40
Total Weight:				Total:	\$3,936.40

Prices are firm for 90 days from the date of quotation unless shown otherwise. Upon acceptance, prices are firm for 6 months. This quotation is expressly subject to acceptance by Buyer of all Terms stated in the attached Terms document, and any exception to or modification of such Terms shall not be binding on Seller unless expressly accepted in writing by an authorized agent or Officer of Seller. Any order submitted to Seller on the basis set forth above, in whole or in part, shall constitute an acceptance by Buyer of the Terms. Any such order shall be subject to acceptance by Seller in its discretion. If the total price for the items set forth above exceeds \$50,000 then this quotation IS ONLY VALID if countersigned below by a Regional Manager of the Safety & Security Systems Group, Federal Signal Corporation. Installation is not included unless specifically quoted as a line item above. Adverse Site Conditions, including rock, caving soil conditions, contaminated soil, poor site access availability, and other circumstances which result in more than 2 hours to install a pole, will result in a \$385.00 per hour fee, plus equipment. Trenching is additional. Power Clause, bringing power to the equipment is the responsibility of the purchaser. Permit Clause, any special permits, licenses or fees will be additional. See attached Terms sheet.

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Proposed By: Bill Van Dyn Hoven  
Company: Emergency Communication Systems  
Address: W971 County Road CE  
City, State, Zip: Kaukauna, WI 54130  
Country: USA  
Work Phone 920-585-4001  
Fax:  
Approved By: Bill VDH

Signature: *William Van Dyn Hoven*

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Country: USA

2



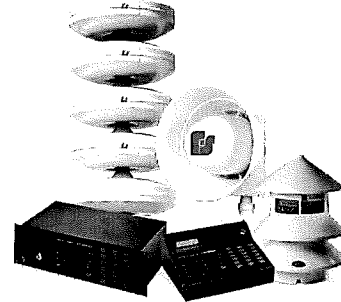
## Emergency Communication Systems

*Safety First*

W971 County Road CE  
Kaukauna, WI 54130  
920-585-4001

# Estimate

Date	Estimate #
9/29/2020	5423



### Name / Address

Sturgeon Bay  
421 Michigan St  
Sturgeon Bay, WI 54235

Description	Qty	Rate	Total
<ul style="list-style-type: none"><li>•Remove and Install (1) Federal Signal Siren per Federal Signal installation specifications at site approved by the city</li><li>•Furnish and install electrical accessories for 120/240 vAC operation of siren</li><li>•Includes piping and wiring that is required</li><li>•Program, Test and Optimize System</li><li>•Includes crane and bucket truck required to complete the work</li></ul>	1	3,975.00	3,975.00

(2)

### Total

\$3,975.00

Phone #

920-585-4001

E-mail

Bill@Siren-Service.com

Web Site

[www.EmergencyCommunicationSystems-ECS.com](http://www.EmergencyCommunicationSystems-ECS.com)

**SNOW & ICE CONTROL**

**POLICY & PROCEDURE MANUAL**

**CITY OF STURGEON BAY**

**DEPARTMENT OF PUBLIC WORKS**

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## **INTRODUCTION**

The design of this policy and procedure manual is from the perspective of the new Manager as well as the new employee. It presents a detailed overview of Snow and Ice Control Operations. It also contains the goals and objectives of these operations and can be reviewed by the City's elected representatives for adherence to their policy goals and objectives in the areas of snow and ice removal and control.

## **GENERAL**

All snow and ice control operations are considered emergency in nature because public safety is involved. Consequently, regardless of the time of day or day of the week, the work is accomplished as expeditiously as possible. In order to achieve this level of service, long range planning and equipment readiness are undertaken by the Operations and Maintenance Sections. Short range operational planning is done by these sections every time weather forecasts indicate a potential for adverse weather.

Short term advance preparation is often difficult because of the infinite variety of conditions that can occur during the long snow and ice season. The snow and ice season in Wisconsin can begin as early as the middle of November and last until the middle of April. While storms can occur outside of these time frames, they are the exception rather than the rule. The rate and accumulation of snowfall moisture content; temperature during and after a storm, pavement temperature, wind direction and velocity during and after the storm, duration of the storm, time of the day or night as well as day of the week, and intervals between storms all interact to make each storm unique in many aspects. Therefore, while a plan exists and there is a standard method of operation, there must be enough flexibility within the plan to provide for any difference or contingency as it arises.

Generally, the greater the snow accumulation, the greater the problem and the more complicated the operational response becomes to ensure proper clearance of streets/sidewalks. However, a snow plan based on snow depth alone would be much too simplistic to be effective. For example, a rapid rate of snow accumulation can close streets before plows can get to them. High winds can quickly cause drifting and block streets while continued wind can make re-plowing of already cleared streets necessary. Heavy, wet snow is more difficult for plows to push than light dry snow; therefore, the time it takes to complete an operation is lengthened.

Timing and temperature can also complicate the operation. A storm during a weekday rush hour is harder to combat than one which occurs early on a weekend day simply because of traffic patterns and congestion. A moderate snowfall on warm pavements may melt quickly when salt is applied. However, a comparable snowfall in inches during sub-zero weather may require plowing and several applications of de-icing material (salt, (sodium chloride) or sand/salt mix), before satisfactory road conditions are achieved.

All factors need to be considered when Managers are formulating plans for each and every snow and ice control operation, when evaluating the effectiveness of a specific operation and the effect any

operation has on minimizing a storm's impact on the Community.

## **GOALS**

1. Minimize hazards of slippery road conditions to motorists and pedestrians through tried and proven methods of snow and ice control on City streets.
2. To reduce economic losses to the community and industry caused by workers and commercial enterprises not being able to get to their jobs, and receive/make deliveries.
3. To facilitate handling of emergencies by Fire, Police and Emergency Services activities in winter months.
4. To restore normal traveling conditions for the convenience of the general public as soon as possible after each winter storm event.

## **CLASS OF ROADS**

For snow and ice control purposes, there are three (3) distinct classes of roads which are maintained at different levels under the City's winter road maintenance policy. These are listed in priority order as follows:

Main Streets / Lifelines - These include mass transit routes and arterial for through traffic as well as residential streets having unusual geometry, such as hills and curves. Also, included are routes to emergency facilities (Hospital, Fire and Police Depts.).

Residential Streets - These include lesser traveled streets as well as dead ends streets and service drives.

Alleys - Alleys are the lowest priority for snow and ice control and will receive services only after main and residential streets have been completed.

Parking Lots - Parking Lots are cleaned at the time area streets are being cleared. Hauling is done as a separate operation on both main and some residential streets.

## **POLICY STATEMENT**

The City of Sturgeon Bay will attempt to keep roads passable even during heavy snow events. We will achieve near bare pavement surfaces as expeditiously as practical, following every storm. This may be achieved through chemical means with the use of salt (sodium chloride), sand/salt mix and possibly calcium chloride (if temperatures are below 15 degrees F, mechanical means (snow plowing), or a combination of both.

During a storm, arterial streets through the business district receive priority followed by other main streets and certain collector streets. These streets are salted and/or plowed to achieve as bare a pavement as possible given the weather conditions as they exist at the time.

Once the mains routes are cleared and in passable condition, residential streets are cleared. **This may not happen for several hours after a significant snow event.** These streets are cleared to as bare a pavement as possible, then de-icing material is applied to the roadway with consideration for resource conservation, facility protection and environmental concerns. Plowing, if necessary, is generally within one foot (1') of the face of the curb except in special cases where narrow streets dictate face of curb plowing or where overhanging trees, curves etc., may dictate distances further than one foot (1') from the curb.

Alleys are plowed to their full width, one pass in one direction with a V-plow, so that the snow is equally distributed. Alley ends are re-opened after the streets are plowed.

During a snow storm hazard (6" or more) when regularly scheduled garbage/recyclable collection would occur, the Director of Municipal Services or Crew Supervisor may determine that it is necessary to utilize garbage personnel to complete snow plowing operations and collection for that day would be cancelled. Garbage/recyclables would then be collected the following day or week. This cancellation notice would be broadcast on local radio stations, social media, and on the City's website.

### **WHEN TO PLOW**

The decision to plow is typically made by the Director of Municipal Services by recommendation of the Crew Supervisor. The decision whether to plow the streets, apply salt or sand/salt or both is not a straight forward matter. It is the responsibility of the Crew Supervisor to evaluate the conditions of each storm occurrence. The Crew Supervisor may decide to wait until the following morning to plow if the snow ends in the late evening or night, even if the snowfall is substantial. Several things are taken into account when making this decision. Ultimately safety is paramount when deciding when to plow; our plow equipment consists of very heavy, powerful and large equipment. Our operators must be vigilant and well rested before starting to plow.

When the storm has or is projected to snow greater than two inches (2"), the plowing procedures begin at 3 A.M. When the snowfall is less than two inches (2"), crews come in at their regular time of 7 A.M. or only a portion of the crew is called in early to concentrate on ice conditions. For more severe snowfalls or during an event, the crews are concentrating on keeping routes open at the safest possible level and a complete snow plowing operation may begin the next day.

Snow storm hazards can be declared during severe storms by the Director of Municipal Services. During these events, plowing operations maybe suspended until we can effectively conduct a plowing operation. During these periods, two (2) employees will remain available at the Municipal Services Building to insure that emergency services (Police, Ambulance, Fire, etc.) can respond to all locations in their service areas.

## **PRIORITY SNOW & ICE CONTROL**

Sturgeon Bay's Snow and Ice Control Policy is based upon a priority system and designated routes. That is, those streets which have the highest priority receive the first attention (Outlined in Map 1) These streets are often classified as Lifelines because of their proximity to both residential and commercial areas and of the need to allow accessibility for emergency vehicles, allow normal business operations and are situated so that most residents can gain access to a plowed street within a few blocks from their homes. They include major arterials (i.e., Bus. Hwy 42/57, Michigan St., Neenah St. from Maple St. to Hwy 42/57, Maple St. from Neenah to Duluth Ave., Joliet from Maple to Duluth Ave., N. 8<sup>th</sup> Ave. from Egg Harbor Rd to the City Limits, N. 14<sup>th</sup> Ave. from Egg Harbor Rd. to the City limits), roads adjacent to emergency facilities (i.e., hospital), connectors (i.e., downtown East and West Sides etc.). Next, the snow and ice control operations concentrate on the less traveled collector streets and finally the residential streets and alleys. The routes are not changed for each event, therefore, those residents last on the route could consistently be the last. The exact route may change due to a different driver covering the route during an employee's absence.

## **DOWNTOWN BUSINESS DISTRICT**

There has always been equipment assigned downtown area immediately after a snow storm. The snow blower will operate to ensure the removal of snow from the downtown sidewalks as outlined in Maps 2 & 3 at the same time as the plow operators start. Snow shall be stored on top of the curb in the first 3' to 4' of area until removed. Pedestrian ramps must also be cleared of snow daily. Business owners are encouraged to clear pathways through the snow storage area at the start/end of each parking space. This Department will contact businesses who make no effort in removing snow from their sidewalks.

Other equipment assigned to the downtown area includes trucks and a loader. The loader is assigned to clearing all public parking lots. The downtown areas are a top priority by this equipment at the outset of the snow removal operation. Snow from the streets is pushed to the curb lines, allowing parking in the parking lanes, and removed on the subsequent night. This is because the loader, which is used with the snow blower attachment to load trucks during the snow removal operation, is cleaning cul-de-sacs and all other trucks are assigned to designated areas clearing City streets, therefore, personnel and equipment are not available to haul the snow away immediately.

## **SNOW HAULING**

Snow from the downtown business district is removed after roads have been plowed curb to curb and when there has been sufficient snowfall to warrant the removal and when the conditions are right. In the past, this has been when the snowfall is in excess of four inches (4") and temperatures are low enough to crystalize the snow. However, if the quantity of snow is in excess of four inches (4"), the snow will be hauled away regardless of the temperature. Snow removal may be delayed when short



range forecasting predicts that additional snow will require plowing. Snow is typically not hauled on Saturday or Sunday mornings. The majority of the snow hauling is done at night to eliminate conflicts with traffic and parking. An alternative to parking on the street is provided for immediately by the Department's plowing of public parking lots and ensuring that the sidewalks are fully cleared.

The snow hauling from all planned areas is completed over a three (3) day period and includes over time and regular hours, between 1 AM and 1 PM. This allows the salt to get the streets to the desired near bare conditions prior to sundown.

#### **A. ICE CONTROL (SALTING) PROCEDURES**

The objective is to complete salting operations for all the main and residential streets no later than 10:00 AM on weekdays unless the timing of the storm makes this impossible. This depends on when the storm begins and ends.

The following is a check list for the Director or Crew Supervisor to help guide them through an Ice Control Operation and ensure that all procedures are being followed:

**\*\*Salting will not typically occur during a snow storm until after the snow has stopped; it is typical to plow more than one time during a storm. Plowing a salted street is wasteful, costly and ineffective\*\***

1. The Police Department will notify the person in charge via phone or pager that road conditions warrant the start of a salting procedure.
2. Prior to calling out a general salting operation, make observations of road conditions as you leave your house. A good indicator is the Michigan Street Bridge, since it tends to be the first spot to develop icing problems. If you suspect localized problems not present in the entire City, patrolling police squads may be contacted by radio through the dispatcher for additional information. This could save valuable time for certain types of storms such as localized ice storms.
3. Begin calling in personnel in accordance with the appropriate overtime roster:
  - A. Salt truck Operators\* - two (2) or more if needed
  - B. Loader Operator\*\* - to clean Municipal Services lot and load trucks with salt
  - C. Fleet Mechanic if needed

**\* Salt truck operators must be called out according to the current overtime roster. It is imperative that this roster be updated and followed.**

**\*\* Loader operator is optional if truck operator can operate loader.**

4. Upon arrival at the Public Works facility, report to the office to be sure that the callout is proceeding according to the roster and the appropriate number of operators have been called.

5. If the operation is related to a major storm the Crew Supervisor will prepare a Storm Report Form. (See Appendix 1)
6. Hand out assignments in the usual salt route priority order unless special instructions have been given by the Crew Supervisor. The areas are dispatched in the following order:

Area 1 Includes Bus. 42/57, Michigan St. Bridge, all by-pass entrances on 42/57, Neenah from Maple to Hwy 42/57, Maple from Neenah to Duluth, Joliet from Maple to Duluth, N. 8<sup>th</sup> Ave. From Egg Harbor Rd. to City Limits, N. 12<sup>th</sup> Ave. from Egg Harbor to City Limits and the Hospital

Area 2 Hill and curves throughout the City.

Area 3 Residential areas throughout the City.

Area 4 Parking lots and alleys

7. Once the driver has been made aware of how they are to handle the route assignments, they must check the salt flow to make ensure the gate is set at the desired opening. Adjustments are made on the insert bodies. Gates are usually cranked open when the trucks are washed and may need to be reset at the beginning of an operation.
8. Proper spreader setting of each individual salt spreader is done to avoid using more salt than necessary depending on the severity of the storm. Proper setting also reduces wasted time by not spreading a sufficient amount.
9. It is best if the Crew Supervisor can be behind the spreader in order to observe first hand that the amount of salt discharging and pattern of salt spread is correct. The Crew Supervisor should observe each route as early in the operation as possible as well as remind operators to look for themselves.
10. Continue observation in the field, to spot check routes and make any adjustments necessary either to spreader adjustments, spinner speeds or if another route driver needs help plowing
11. Stay in contact with the Crew Supervisor and provide progress statements so that they know what is happening with the operation. The office is in the position to communicate information both to the public and the operators.
12. When snow is becoming significant or there is more than one inch of snow on the pavement, you may want to consider mounting plow blades in order to salt and plow at the same time. Contact the Crew Supervisor at this point.

13. If the temperature is below twenty (20) degrees F, a sand/salt mix is spread in rural areas only (areas without curb/gutter that border the boundary of the City limits). The Director or Crew Supervisor t may direct sand/salt mix to be spread in other areas in times.
14. If the snow continues to accumulate, you are in doubt what action to take next and snow plowing seems eminent, contact the Crew Supervisor immediately day or night, weekends or holidays. (If for any reason Crew Supervisor is unavailable, contact the Municipal Services Director). In general, if the snowfall amounts are such that the need for a plowing is borderline, a decision to plow should be made!
15. City parking lots and alleys will be salted after all other areas have been completed
16. Operators should make out Salt Area forms after salting has been completed (See Appendix 2).
17. Schedule the washing of the salt spreaders as soon as practical after an operation.
18. Operators must check trucks and salter. Lubricate the chain conveyor after each storm in preparation for next storm

**Prior to the start of the snow season, the drivers will coordinate with the mechanic to make sure that the spreader trucks are properly calibrated to discharge 500 lbs. per mile. The way the routes are designed, this means an average of 250 lbs. per lane mile of road (See Appendix 4).**

## **B. SNOW PLOWING OPERATION**

The City of Sturgeon Bay's objective is to achieve near bare pavement as quickly as reasonable by utilizing either chemical or mechanical means or both while considering resource conservation, facility protection and environmental concerns.

**1. Weather Monitoring:** It pays to stay on top of the weather during the winter months for several reasons. It helps in projecting work assignments, especially where the temperature may have an effect on what is being planned. As managers we need to know what type of weather is in store. We need to make sure that we are available if needed for a large snow storm. Or, if we should stay close to a phone on any given day or night when an operation might be necessary.

The City of Sturgeon Bay monitors winter weather forecasts and conditions from three or four primary sources which the Director and Crew Supervisor t can check:

- a. Local News Stations: These are generally good for getting a long range forecast.

- b. Cable Weather Channel: Good for 24 hrs. advance forecast.
- c. National Weather Service: Has the most up to the minute forecasts.
- d. By visual check of road conditions.

**2. Training:** The Department of Public Works has an annual training session on snow plowing. Audio and visual aids may be used to illustrate some of the techniques discussed during the training.

This training should take place prior to the start of the winter snow plow season and should involve everyone who will or could possibly operate equipment for the Department during the winter season. While some of the material is rather basic information, it never hurts to review it so that everyone is operating under the same premise.

In addition to the formalized classroom type training, a second segment which often may be overlooked but is equally as important if not more important than the classroom situation is to physically drive the routes. For those operators who have permanent route assignments, time should be taken to allow them to drive their route prior to the winter season. They should look out for potential hazards such as low hanging branches, raised manholes, etc. The driver should note any hazards that can be repaired or corrected prior to winter snow plowing season. If repairs are not made prior to winter plowing season, drivers should note any hazards on their snow plowing area map to inform substitute drivers. This map should be kept in their trucks at all times so if any other hazards are noticed they can be added to the map. A copy of this map must be filed with Crew Supervisor whenever hazards are noted or corrected.

**3. Manpower and Equipment Assignments:** Each Fall the Crew Supervisor develops a Plowing Roster, which contains the names, phone numbers, truck number and radio call number of all personnel who have regular assignments during a plowing operation. While management tries to keep in mind operator preference for routes and vehicles, equipment is generally assigned to routes for specific reasons. The roster also contains names of extra personnel (those who do not have regular assignments) who can be called on in an emergency to fill vacancies on regular routes due to absences. The Director or Crew Supervisor will make adjustments as necessary. Having the same person on the same route with the same equipment helps develop a familiarity with the route, which in turn leads to more efficient plowing. The roster exists because the City has the responsibility to collect residential solid waste/recyclables and plow snow at the same time. There have been rare occasions when the weather is so severe that the garbage/recyclable collection has been canceled. However, there is sufficient equipment available that this does not normally happen in order for a full scale snow plowing to take place. Therefore, the use of collection personnel must be limited so as not to interfere with their availability for daily garbage/recyclable collection.

**4. Equipment:** Prior to the startup of a snow plowing operation, the Director of Crew Supervisor checks with the Maintenance Mechanic to see if any of the front line vehicles normally used in the plowing are inoperable due to pending repairs. When this happens, replacement vehicles are used. A list of the equipment which is used for snow plowing appears in Appendix 3.

The use of extra or specialized equipment may sometimes be necessary because of events during a particular storm. At least one end loader is used to load ballast on dump trucks and the other is used to clean up dead ends and cul-de-sacs. The end loader used to load ballast later cleans the City Shop parking lot and can also be used to clean parking lots. Most of the specialized equipment is used after a storm and will be discussed under cleanup operations.

## **5. Plowing Routes**

**a. General Instructions:** There are a series of general instructions that must be given to plow operators at the beginning of each operation as a reminder of what must be done. The objective should be to clear accumulations of snow and/or ice from the streets and get as close to the curb as possible the first time through the streets, so that individuals who must clear their walks and driveways are not unnecessarily inconvenienced. Supervisors must check to make sure that drivers are plowing close enough to the curb. If not, they should be sent back immediately to re-do that section of the route that is determined as not being cleaned close enough to the curb.

### **b. Efficient Plowing for Plow Operators:**

1. Be sure to clear all streets from curb to curb. If there is a furrow down the middle of the street because of incomplete plowing, make sure it is removed. Get close enough to rural type mailboxes so that mail delivery can be made. If the blade is equipped with a plastic plow guide, the guide should occasionally be hitting the tops or sides of the boxes. This will assure that the trucks are close enough to the curb.
2. Always travel with the blade down when going from one destination to another unless the street is clean, there is a mechanical failure or the road on which you are traveling is not the responsibility of the City of Sturgeon Bay for winter maintenance. Plow a travel lane or clean up to the curb.
3. Whenever possible, layout the route to plow snow to the open side of the road away from houses and driveways if there is an open side of the street such as (i.e., N. 3<sup>rd</sup> Avenue and Memorial Drive).
4. Be sure to communicate with the Director or Crew Supervisor if you must leave the assigned route area or have a mechanical breakdown. Being away from your route without prior approval may result in disciplinary action if reasons are justified.
5. Any accident or property damage (including parked vehicles, mailboxes, fences etc.) must be communicated immediately to both the Dispatcher, the Director or Crew Supervisor. Property damage accidents must have a Police report filed unless the Police Department approves otherwise because of other emergencies. In this case, be sure that the Director or Crew Supervisor has had a chance to investigate before any of the parties leave the scene.

6. Notify the Crew Supervisor when the route is completed before starting clean-up plowing. It may be necessary to re-assign you to help plow a different route, therefore delaying the final clean up on your route (See Maps 4 & 5)

**6. Route Sections:** The entire City has been divided into ten (10) separate sections or routes. Seven (7) routes normally have one (1) truck assigned. One (1) route, because of its size and area have a grader assigned. One (1) end loader with plow does specialized areas such as dead ends and cul-de-sacs. This equipment can be re-assigned if necessary due to the breakdowns of other equipment or if another route is not being completed in a timely manner. Ten (10) units are, therefore, needed for a complete, fully staffed plowing operation. The Director or Crew Supervisor must make every effort by calling all personnel, extras and outside drivers to have a full complement of persons and equipment.

A map is available of each route that encompasses the entire area to be plowed. Each map shall have additional information about the routes attached to it. For example, the proper side of the street to push snow, special problems such as driveways close to the ends of dead ends to be aware of, a host of similar problems. Streets are plowed in order of priority with Mains being first followed by residential and then alleys and parking lots. Each route is a separate section. This is done in order to make it easier to keep track of where trucks are working, how much has been done and what is left to do. It is important that the drivers and Director or Crew Supervisor working during the storm communicate regularly with each other. Progress reports are necessary so that manpower and equipment can be shifted to where it is needed most.

**7. Parking Lots & Cul-de-sacs:** Parking lots may be plowed by the route truck or in most cases by a one (1) ton or end loader. Fire Department and Library lots are done with the trackless. Cul-de-sacs are done by loader because of its short turning radius. A list of lots for which the City has responsibility, the plow route on which they appear, and any other special notations needed for the winter season can be seen on (Map 6). It is the Department's policy that parking lots be plowed prior to the time at which they are normally used. Therefore, operators should be taking place on a workday. A special note needs to be made relative to the Fire Department lots. (Plowing operation should not block Fire Department lots.)

Cul-de-sacs provide a challenge to abutting property owners due to the size of them and the lack of area for the snow to be plowed to. It is typical to make one pass in the cul-de-sac and push the snow with a straight blade into a lawn area around the perimeter. In some cul-de-sacs this is not possible due to landscaping or property owners not wanting a large pile of snow in their lawn. This results in a significant amount of snow plugging the ends of driveways. When the city has received more than four inches of snow the loader operator will make the first pass along the curb pushing outward. Subsequent passes shall push the snow into a pile in the middle of the cul-de-sac. After the snow storm passes City crews will remove the piles from the center of the cul-de-sacs.

**8. Alleys:** Alleys throughout the City are plowed with a one ton truck outfitted with a V-plow. The plow blade is typically set on the V setting to give equal distribution of snow on each side. Alley ends will be opened by a loader, one ton or Trackless, whichever becomes available first. It is important that speed be reduced while in the confined spaces of alleys. Watch carefully for obstructions such as walls,

fences, etc., which if damaged will result in expensive claims paid by the City.

**9. Dead Ends:** Many of the dead ends or cul-de-sacs appear on a list for the end loader (Map 8). However, the job of the regular plow truck on the route is to open these areas as much as possible without blocking driveways or alley openings. For a small cul-de-sac, the best method is to back into the bulb and push the snow out and to the side. If the bulb is large enough to make the turn, backing may be unnecessary. Do not block driveways. The same is true for dead ends. Several of these dead ends have barriers to prevent accidents. Care should be taken when plowing snow against these barriers so that they are not damaged. Snow will be pulled from the dead ends as time permits.

**10. Recording Progress:** One of the goals is to be able to better chart the progress toward completion of snow plowing on a City wide basis. This means developing routes that will always be plowed in the same manner. This will enable the Director or Crew Supervisor in charge with overseeing the operation, to determine the progress of each route is, even though he does not see the operator (s).

The Director or Crew Supervisor will be able to keep the Municipal Services office informed as to areas completed, who in turn will be better able to respond to calls from the public. This process will provide everyone with better information from which to answer questions regarding a specific plowing operation. In addition, it will be easier to make equipment/manpower re-assignments from routes which are completed to those which still have work left to do.

However, the most important objective in reporting progress is to provide for a more balanced operation and one which has a better chance of achieving the goal of finishing the entire City at about the same time. Based on past and accurate information, plow power should be balanced so as to avoid specific areas always lagging behind or being the last to be plowed.

**11. Handling Emergencies:** During a storm, there may be a need to respond to an even greater emergency than just the snow on the ground. Calls from the Police or Fire Dispatchers are to be forwarded by the Street's Assistant to the Director or Crew Supervisor for disposition immediately. These may include such things as opening pathways or driveways for emergency vehicles on roadways or parking lots that have not yet been plowed, or providing access for uniformed personnel for some other type of declared emergency.

The Street's Assistant is also to notify the Director or Crew Supervisor immediately in emergency and needs ingress or egress to/from a particular location. The drivers will make every effort to accommodate these types of calls. These items are a priority and need to be handled immediately, even if it means the temporary re-assignment of equipment.

It should be noted here, that such things as routine doctor appointments or other Non-emergency type visitor appointments will not receive this type of service at the height of a snow emergency.

## **C. SNOW CLEAN UP**

Several important elements are included under the heading of snow clean up. There are actually two types of cleanup which are generally practiced after each plowing operation.

First, take care of snow islands, areas of snow where vehicles or other obstructions prevented the snow from being completely plowed, or widening areas where the snow was not completely pushed back to the curb. This is also the time to push snow back at intersections where there are no sidewalks to block. Caution must be taken not to push snow onto fire hydrants or damage other types of street furniture. The second is when all the streets on the routes have been plowed curb to curb, operators turn their attention to preparing their equipment for snow hauling from the Business District.

### **1. General Instruction:**

- a. Clear windrows (plow furrows which might impede traffic from corners and intersections).
- b. Be sure that all crosswalks at Business intersections have been cleared.
- c. Clear all right and left turn lanes for their full widths. Also, all school drop-off lanes should be cleared.
- d. Make sure that snow is pushed close enough to the curb in front of rural mailboxes so that delivery can take place.
- e. Clear any snow islands (areas which were not plowed the first time because of a parked automobile) which remain on the route.
- f. Mark down and make the Director or Crew Supervisor aware of any special problems which may exist and need extra attention during daytime clean up following the storm.
- g. It is impossible to plow the streets and not leave a furrow across driveway approaches. Use good judgement and try not to fill in driveways especially during clean up and after the approach has been cleared by the resident.
- h. All snow hazards must be cleared from the route before reporting as complete to your Director or Crew Supervisor.

**2. Snow Hauling:** The first area hauled is the East Side Business District, with this operation typically starting between 1 and 3 A.M. the day after plowing. The West Side Business District will be cleared immediately afterward.

There are several locations where snow is temporarily stored during an initial plowing operation and then later removed at a more convenient time. Removal from these locations is usually a daytime operation and follows within the first few days after a storm. The following is a list of locations which are checked regularly after each storm to see if any hauling needs to take place:

- a. Cul-de-sacs after a significant snow event
- b. All City Parking Lots
- c. Library Lot
- d. School Areas (along streets)



- e. Churches (along streets)
- f. N. 3<sup>rd</sup> Ave. (Bay Ship Area)
- g. High visibility corners (Corners needing wide vision triangle)

Following several successive snow storms with no thawing or unusually large storms, there may be other areas which might need to have snow hauled in order to maintain free flowing traffic conditions or reserve room for future snow storms. The Director or Crew Supervisor can direct additional hauling from areas they deem necessary.

**3. Blowing Snow:** There may be times when, for some unforeseen circumstance, the snow was not plowed close enough to the curb, or accumulations have become so great that street widening is necessary. The City does have a snow blower which can be used for this type of operation. However, it is costly and should be done only when other alternatives have been exhausted.

There are two methods which can be utilized when operating this equipment. Snow can be blow into an open adjacent area such as a field or boulevard area. Or, it can be blown into a truck and hauled away. The first method is less costly and should be done if it is possible.

Blowing of designated sidewalks including the Library's parking lot and rear drive area is done with Trackless Machines with front end blowers. The Michigan Street Bridge walkway is cleaned either by hand shoveling or using a snow blower

#### **D. PLOW VEHICLE PREPARATION, INSPECTION & CLEANING EQUIPMENT**

**1. Mounting Blades:** If the plowing takes place during the day or is scheduled well in advance, the mechanic from the Maintenance Department tries to mount as much equipment as possible in the time allowed. He will be assisted by members of the Street Department. Those trucks with blades not mounted will have them attached by the person assigned to the vehicle. If assistance is required, another operator or the Mechanic can be called upon. Wings on graders are mounted by the operators with assistance from other personnel or the Mechanic.

The Director or Crew Supervisor t will direct personnel when to dismount the plow blades. They may remain on the trucks at the end of an operation if the Director or Crew Supervisor expects to use the vehicles for clean-up operations. When all of the plowing and clean up has been completed, personnel will be assigned to make sure that all blades are off the trucks, properly stored (elevated so that the mounting can be accomplished without any problems), that the plow hoists on the truck are retracted (this prevents rusting). Each blade should be stored directly in front of the truck to which it is assigned inside the Public Works Bldg.

**2. Ballast for Trucks:** There are two (2) different types of trucks used for snow plowing. Each type loads ballast but in significantly different ways. Each will be covered here. Ballast is weight added to trucks (preferably over the axle) to give added traction to vehicles for plowing. The ballast used by the City is a sand/salt mixture. The current pile is in the sand/salt shed. The requirement that the pile be covered at all times except when material is being loaded is part of the Wisconsin Administrative Code,

- a. **Dump Trucks** - Dump trucks can easily be loaded/unloaded with ballast. The key point is not to overload trucks as too much weight on the rear axles will cause spring damage. One to two (1-2) scoops of the end loader should be sufficient. This material can remain on the truck at the end of the operation and will be unloaded at the direction of the Director or Crew Supervisor when cleanup operations have been completed.
- b. **Spreader Trucks** - These are loaded with either salt or sand/salt mix. This depends on the temperature when the plowing operation begins. At twenty (20) degrees or lower a sand/salt mix is used. This can change as the temperature raises, in which case salt would be used to melt the snow/ice to near bare pavement. The use of sand in areas having curb and gutter should be minimized to prevent blockage of storm sewers.

**3. Report of Mechanical Failures or Truck Damage:** Whenever an operator has mechanical failure, he should communicate this to either the Director, Crew Supervisor, or the Streets Assistant as soon as it is safe to do so. Sometimes repairs can be made in the field. At other times, the driver will be requested to bring his truck to the garage for repairs. It is important that the Director or Crew Supervisor be made aware of trucks which are broke down either by the driver and or the Streets Assistant. If the repair will take a long time or the mechanic is unable to make a repair for whatever reason (usually the unavailability of parts), the Director or Crew Supervisor should re-assign that driver to a spare plow vehicle (See Appendix 3).

It is important that before the driver is re-assigned, he has filled out the written repair request form to indicate what the problem(s) are with the truck. Make sure that vehicles which are inoperable do not block the aisles in the garage and impede the free flow of traffic. Repair slips which should be made out by the driver if there is no mechanic and given to the Director or Crew Supervisor.

**E. PLOW DAMAGE REPORTING:**

To assure that plows remain in good repair, they should be inspected periodically. Plow blades are to be examined before mounting to make sure that some blade edge remains and the plow itself will not be worn away during the operation. The operator should also inspect the plow during the operations to make sure that they have not worn the blade too far. Finally, at the end of each operation, the operator should inspect the blade for any damage. These plows are re-inspected again as they are dismounted from the truck and put into re-mounting position.

When damage is found to either the blade or the plow itself, a yellow crayon should be used to mark the damage. If there is damage to any of the hoses, springs, or hydraulic rams, it may be easier to indicate where the damage is by showing it to the mechanic. Blades that are used up will be replaced by the operator, with assistance from other personnel. Blades will be repaired by Maintenance and Street Department personnel will be assigned to make sure that the repaired blades are placed in front of the correct trucks before the next storm.

## **F.     DECLARATION OF A SNOW EMERGENCY**

**66.25 Emergency Powers.** Notwithstanding any other provision of law to the contrary, the governing body of any City, Village or Town is empowered to declare, by ordinance or resolution, an emergency existing within the City, Village or Town whenever conditions arise by reason of war, conflagration, flood, heavy snow storm, blizzard, catastrophe, disaster, riot or civil commotion, acts of God, and including conditions, without limitation because of enumeration, which impair transportation, food or fuel supplies, medical care, fire, health, police protection or other vital facilities of the City, Village or Town. The period of the emergency shall be limited by the ordinance or resolution to the time during which the emergency conditions exist or are likely to exist.

The emergency power of the governing body conferred on Sub.(1) includes the general authority to order, by ordinance or resolution, whatever is necessary and expedient for the health, safety, welfare and good order of the City, Village or Town in the emergency and includes without limitation because of enumeration the power to bar, restrict or remove all unnecessary traffic, both vehicular and pedestrian, from the local highways, notwithstanding any provision of Chs. 341 to 349 or any other provisions of law. The governing body of the City, Village or Town may provide penalties for violation of any emergency ordinance or resolution not to exceed a \$100 forfeiture or, in default or payment of the forfeiture, 6 months' imprisonment for each separate offense.

If, because of the emergency conditions, the governing body of the City, Village or Town is unable to meet with promptness, the Chief Executive Officer or acting Chief Executive Officer of any City, Village or Town shall exercise by proclamation all of the powers conferred upon the governing body under Sub. (1) or (2) which within the discretion of the Officer appear necessary and expedient for the purposes herein set forth. The proclamation shall be subject to ratification, alteration, modification or repeal by the governing body as soon as that body can meet, but the subsequent action taken by the governing body shall not affect the prior validity of the proclamation.

## **G.     SNOW ORDINANCES**

In addition to the State Statute, there are several local ordinances which cover snow and ice in the Sturgeon Bay Municipal Code:

**Chapter 8.04** addresses the removal of ice and snow from sidewalks as well as the illegality of throwing or plowing snow or ice unto a City Street (Appendix 4). Residents that violate this code will be sent a copy of the Ordinance and if the violation persists enforcement of the Ordinance should be requested from the Police Department.

**Chapter 7.07** addresses the prohibition of all parking, permits and removal of illegally parked vehicles (Appendix 4).

**Chapter 7.075** Addresses the process for obtaining an all-night parking permit (Appendix 4)

## **H. ASSOCIATED SNOW ACTIVITIES**

There are several activities which surround the snow plowing and ice control season. Some of these are only indirectly related but nevertheless should not be overlooked.

**1. Sand Barrels:** Prior to the beginning of the snow season (about mid-November or sooner), sand barrels need to be placed at strategic locations and filled. Appendix 5 contains a list of current locations and these are reviewed annually to see if any can be eliminated due to lack of use or if another location needs to be selected.

After major storms and once cleanup has been completed, a crew should be dispatched to check and refill the containers. This may also be necessary after successive smaller storms if a major storm has not occurred in between.

Sand barrels should not be refilled after the middle of March except upon request. This will prevent a lot of needless time filling and then emptying them in spring. As soon as practical after the 15<sup>th</sup> of April, barrels should be emptied, collected and stored for the season. Any barrels in need of repair should be placed in a separate location so repairs can be made.

**2. Snow Fence:** Snow fencing is used in areas that have a lot of drifting or blowing snow. It should be placed so that the snow is dropped by the fence prior to reaching either the sidewalk or roadway area. Because Sturgeon Bay is largely developed, there are not many locations where snow fencing is needed. Fencing is erected in late Fall, preferably after there is some frost in the ground so that the stakes which are pounded into the ground are not easily removed and taken down again in spring of the following year.

**3. Sidewalks:** The City has an ordinance that each property owner is responsible for his/her own sidewalk/crosswalk adjacent to their home (See Appendix 4). If the snow or ice is not removed in a timely manner (within 24 hours following a storm), this Ordinance can and is enforced by the Director of Municipal Services or Crew Supervisor. If the sidewalk/crosswalk area is not shoveled, the Director or Crew Supervisor will have the work done by City crews, the cost of which is borne by the property owner. The work is expensive because of the labor and equipment used. It is less costly if the property owner clear the snow/ice themselves or to contract with a service. A minimum fee of \$100 will be charged to cover expenses and overhead.

Sidewalks which are the responsibility of the City are plowed and or salted by the Street and Parks Department.

**4. Snow Dump:** The City of Sturgeon Bay operates three snow dump sites. These sites are only for snow being hauled from properties located within the limits of the City of Sturgeon Bay. They are supervised by the Director or Crew Supervisor who have the right to disallow dumping by any Contractor who violates the above, or, if space does not allow them to haul. Such violations and exclusions would be passed along to the Board of Public Works for confirmation.

## **H. DAMAGE COMPLAINTS**

Due to the nature of snow plow work, there are going to be times when accidents occur. The first priority should be to prevent these occurrences. However, when they do take place, the next response by the Director or Crew Supervisor should be to thoroughly investigate the circumstances surrounding the accident or property damage. While this may be difficult to do in the middle of a storm, it is important to try and get to the scene as soon as possible, so that all of the precipitating events can be accurately recorded. The following is a listing of some of the more common types of damage which can occur and procedures for investigating/resolving them:

**1. Mailboxes and/or Fences:** Plow truck operators try to make the mailboxes accessible, however on occasion they may knock one over or hit one. Operators must report these occurrences to the Director or Crew Supervisor. The Director and Crew Supervisor must also realize that mailboxes can be knocked over without the driver being aware of the fact. It is important to investigate each and every occurrence. We do not replace/repair boxes that were damaged by the snow, only those actually hit by the plow

Reports on either mailboxes or fences may come from a citizen rather than a driver. If this occurs, investigate the incident as soon as possible. If it is clear that the damage was done by one of our truck plows striking a mailbox, check if it is possible to repair the damage using Street Dept. personnel.

If not, have the resident make out a claim form at the City Clerk's Office. Be sure to document each time you investigate such damage. The best method is to write up a small report and attach a picture of the scene.

It is the City's policy to pay for damage done when a mail box or fence has been struck by a City vehicle. However, if the damage was done by the weight of the snow being pushed to the curb or alley line, the City does not honor such a claim. Be sure to keep this in mind during the investigation. This makes it very important for residents to clear snow away from their mailboxes. If the snow is cleared it allows snow discharged from the plow to flow around the box and post. If there is a lot of snow around the post the snow will often push the box directly up and off the mount.

**2. Vehicular Damage:** Any time a City truck is involved in an accident with another vehicle, the appropriate law enforcement officials must be notified to investigate at the scene. It is important that all accidents are reported to matter how minor. It is a violation of the law if accidents are not reported

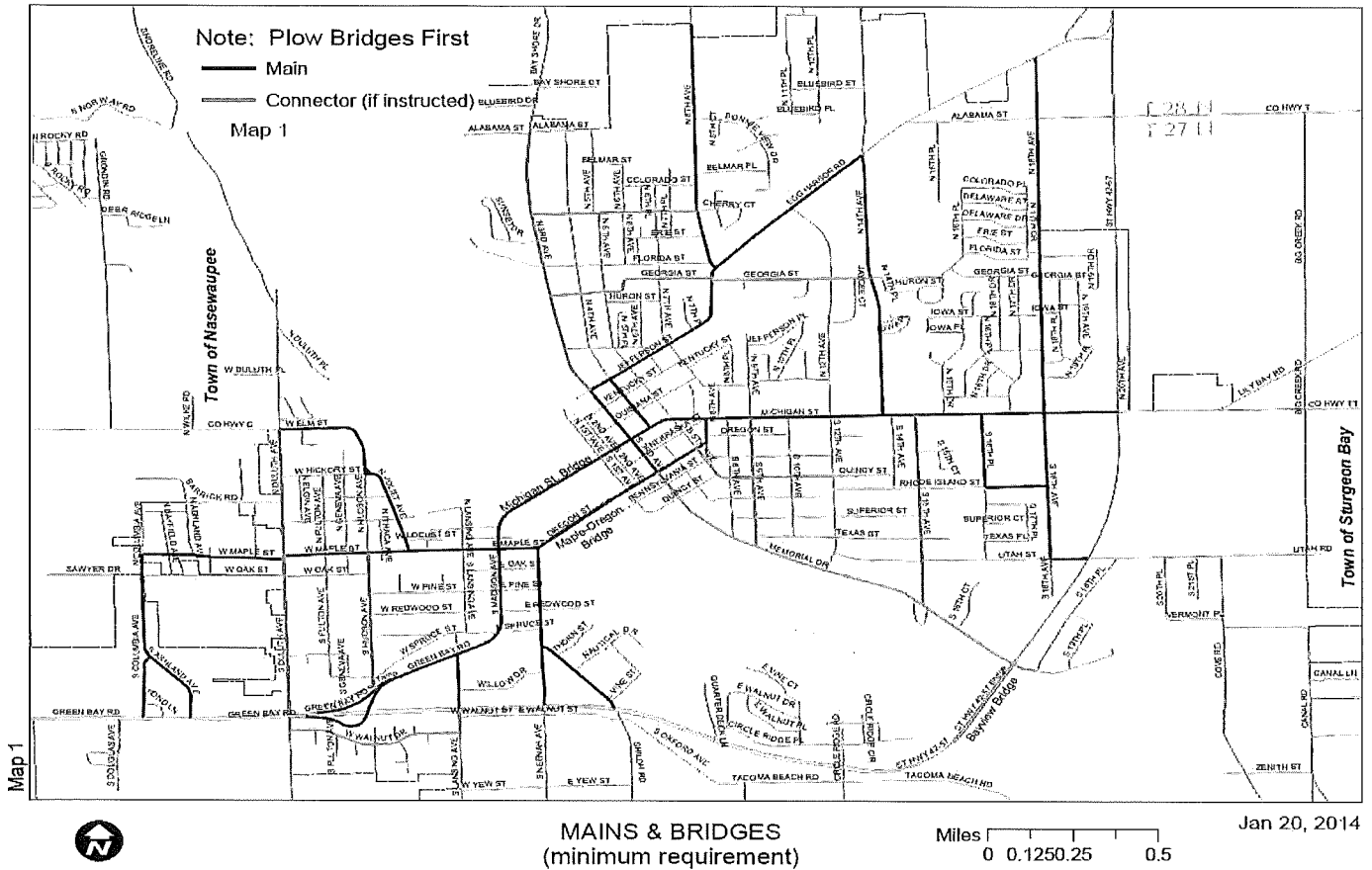
to the proper authorities immediately. The Director or Crew Supervisor should go to the scene and perform his own investigation as well as transport the operator involved in the accident to the local testing site for a Drug and Alcohol Test in accordance with the DOT Drug and Alcohol Testing Policy. It is important to have a written record on file for any future claims against the City which may be initiated.

Drivers must also report any damage done to the vehicle they were driving when the accident occurred. Maintenance should be consulted as to whether it is necessary for the truck to be brought into the garage immediately or if the damage can be inspected at the end of the operation.

**3. Lawn Damage:** Most lawn damage will occur because a truck's plow blade rides up and over the curb and rips up the sod adjacent to the curb. This occurs more often in early or late snow storms when there is little or no frost in the ground. Repairs to sod are made on a complaint basis only. The reason for this is that oftentimes if the sod is merely ripped up, it can be replaced in the spring and will take root without having to re-lay new sod.

The Crew Supervisor should make a list of any properties where damage claims have been registered and are legitimate. These are kept until spring for sod repair. When a resident submits a claim it should be investigated and the resident informed as to if it will be repaired by the City along with some idea of the time frame in which the repairs will be made.

**3. Curb Damage:** Curb damage is also investigated on a complaint basis. If the damage was done by the City plow, the damage should be repaired by the City. These complaints should also be investigated promptly, the owner notified of the disposition and give some idea of when to expect the repair to be made. Curb damaged by others, will be billed to that individual. These repairs should be done as soon as possible in the construction season.



[illegible]

DEC, 2016

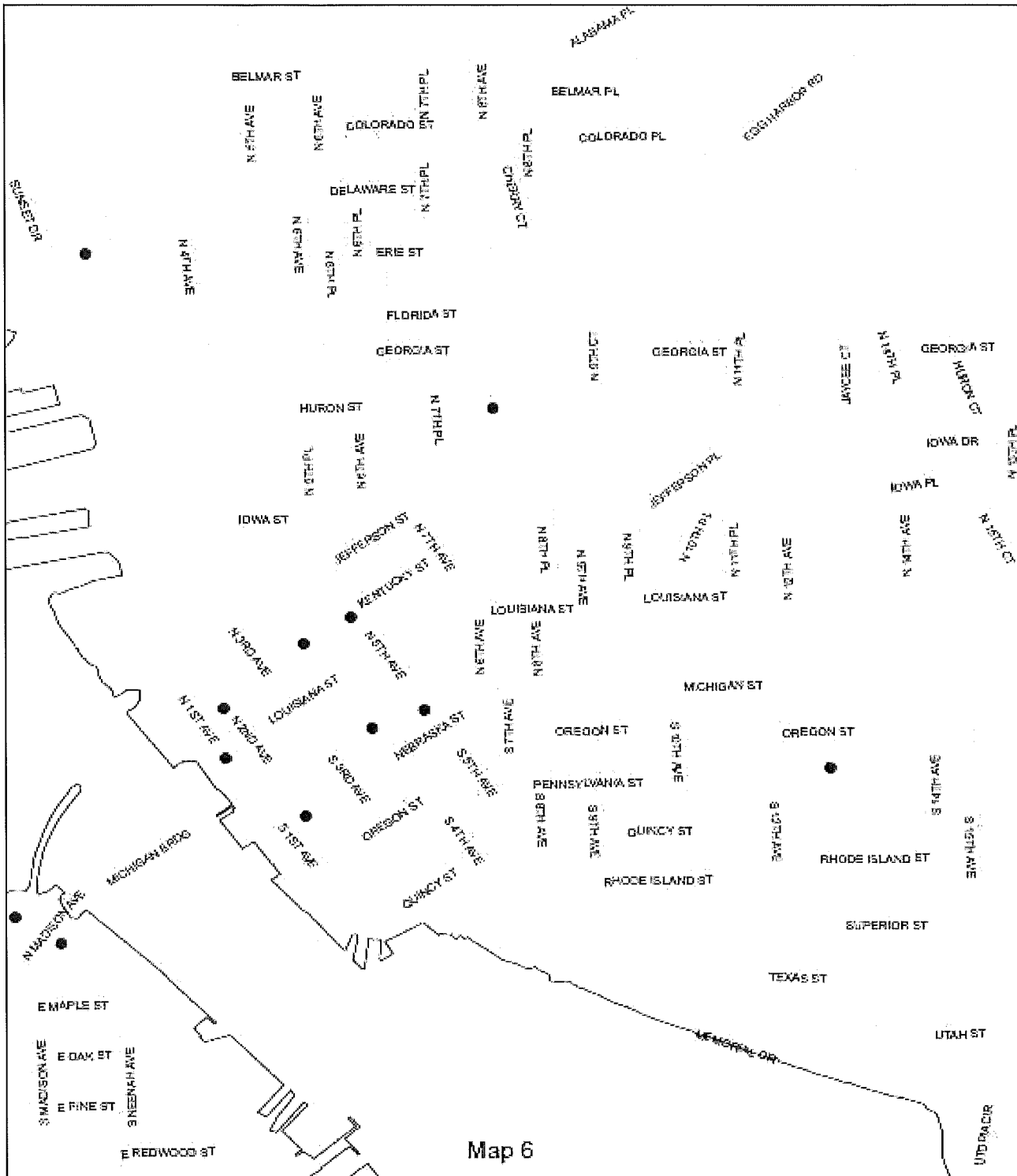


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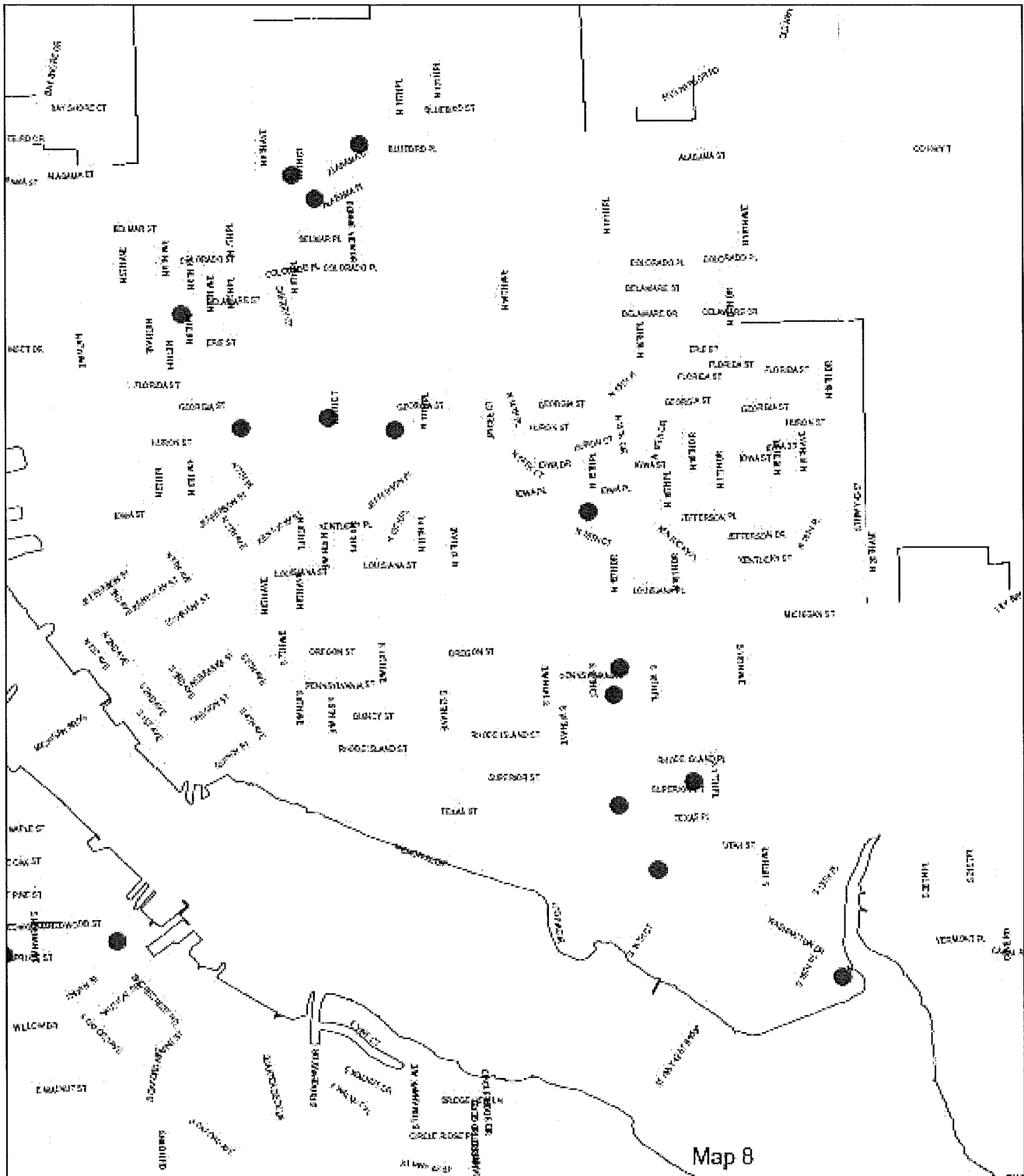




# PARKING LOT SNOW REMOVAL

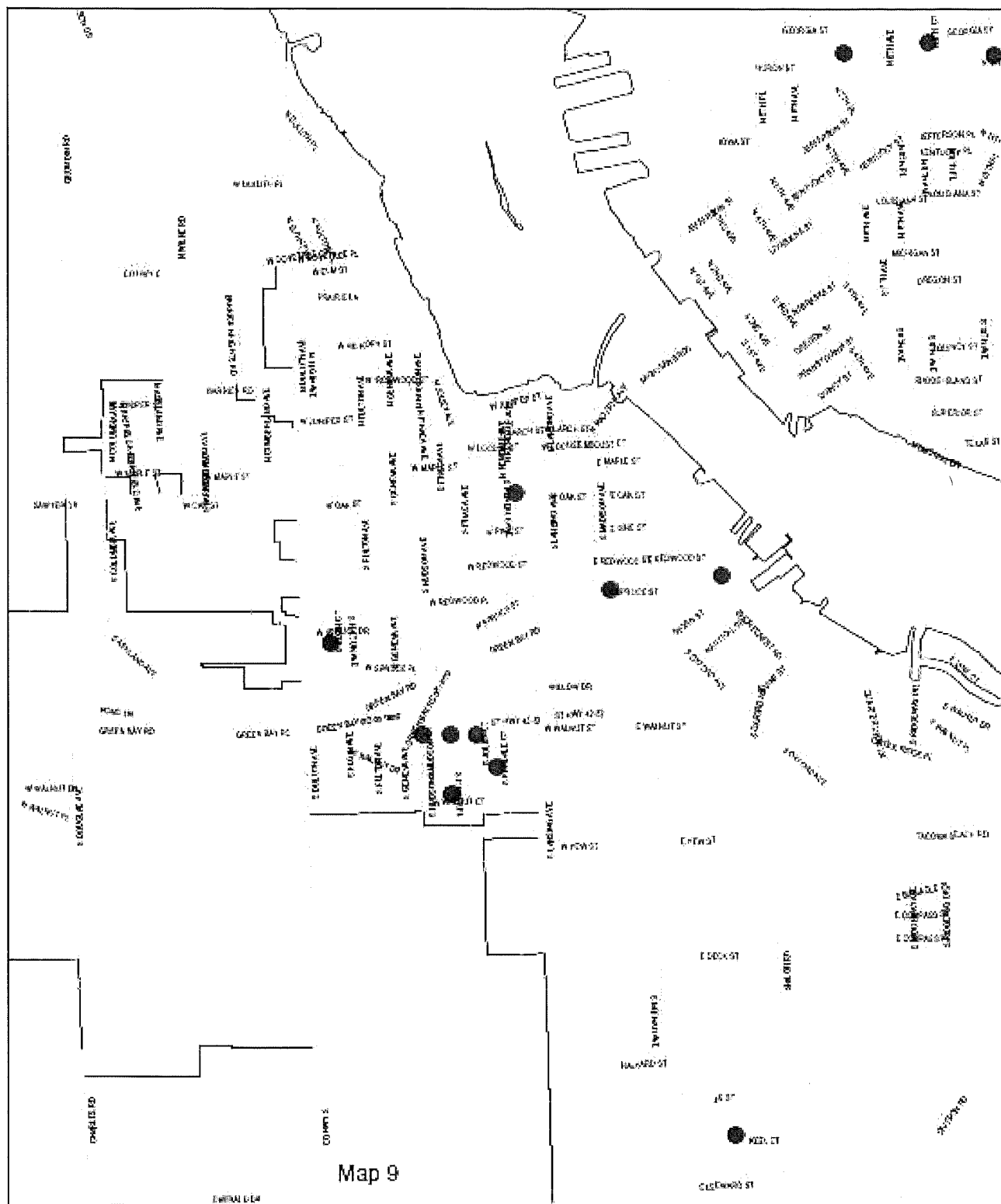
SEPT, 2020





# CUL-DE-SAC SNOW REMOVAL

SEPT, 2020



## CUL-DE-SAC SNOW REMOVAL

SEPT, 2020

**CITY OF STURGEON BAY  
MUNICIPAL SERVICES  
835 N. 14<sup>th</sup> AVENUE  
STURGEON BAY, WI 54235  
(920) 746-2912**

DATE \_\_\_\_\_ STORM REPORT # \_\_\_\_\_

TYPE OF STORM: \_\_\_\_\_ Snow \_\_\_\_\_ Ice \_\_\_\_\_ Rain \_\_\_\_\_ Wind

TIME OF STORM: Began \_\_\_\_\_ Ended \_\_\_\_\_

TYPE OF OPERATION: \_\_\_\_\_ Plowing \_\_\_\_\_ Salting \_\_\_\_\_ Sanding \_\_\_\_\_ Hauling/Removal

TIME OPERATION: Began \_\_\_\_\_ Ended \_\_\_\_\_

TYPE OF SNOW: \_\_\_\_\_ Wet \_\_\_\_\_ Dry \_\_\_\_\_ Combination DRIFTING: \_\_\_\_\_ None \_\_\_\_\_ Light \_\_\_\_\_ Heavy

TOTAL SNOWFALL: \_\_\_\_\_ INCHES TOTAL RAINFALL: \_\_\_\_\_ INCHES

POLICE NOTIFIED: \_\_\_\_\_ START

FLOODING: \_\_\_\_\_ None \_\_\_\_\_ Light \_\_\_\_\_ Heavy

TEMPERATURE: From \_\_\_\_\_ F To \_\_\_\_\_ F

LOCATION: \_\_\_\_\_ Area Wide \_\_\_\_\_ Partial \_\_\_\_\_ Intersection

MATERIALS USED: \_\_\_\_\_ Salt \_\_\_\_\_ Sand \_\_\_\_\_ Brine

LOADS OF BRUSH COLLECTED: \_\_\_\_\_ 1-Ton \_\_\_\_\_ Tandem Axle

EQUIPMENT: \_\_\_\_\_ Tandem Axle \_\_\_\_\_ Single Axle \_\_\_\_\_ Grader \_\_\_\_\_ Loader \_\_\_\_\_ Trackless  
\_\_\_\_\_ Salter \_\_\_\_\_ Salter w/ Spray Bar

COST:

LABOR: \_\_\_\_\_ No. of Employees \_\_\_\_\_ Total Hours \$ \_\_\_\_\_

MATERIAL: \_\_\_\_\_ Tons of Salt @ \$ 71.27 Per Ton \$ \_\_\_\_\_

\_\_\_\_\_ Tons of Sand @ \$ \_\_\_\_\_ Per Ton \$ \_\_\_\_\_

\_\_\_\_\_ Gallons of Brine @ \$ .16 Per Gallon \$ \_\_\_\_\_

TOTAL COST: \$ \_\_\_\_\_

EQUIPMENT DOWN: \_\_\_\_\_ LENGTH OF TIME: \_\_\_\_\_

REASON FOR DOWN EQUIPMENT: \_\_\_\_\_

SUPERVISOR COMMENTS & RESIDENT COMPLIMENTS/COMPLAINTS: \_\_\_\_\_

DISPTCHED BY: \_\_\_\_\_ REPORT COMPLETED BY: \_\_\_\_\_

REPORT REVIEWED BY: \_\_\_\_\_, Director of Municipal Services Date: \_\_\_\_\_



SALTING AREAS

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ CALL TIME: \_\_\_\_\_ CALLED BY: \_\_\_\_\_

MAINS/HILLS/CURVES \_\_\_\_\_ ALL STREETS \_\_\_\_\_ ALLEYS \_\_\_\_\_

RESID. ALLEYS \_\_\_\_\_ PARKING LOTS \_\_\_\_\_

TRUCK # 3 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_ Gallons of Brine \_\_\_\_\_

TRUCK # 5 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK # 6 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK #10 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK #18 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK #22 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_ Gallons of Brine \_\_\_\_\_

TRUCK #30 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK #33 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_ Gallons of Brine \_\_\_\_\_

SALTING AREAS

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ CALL TIME: \_\_\_\_\_ CALLED BY: \_\_\_\_\_

MAINS/HILLS/CURVES \_\_\_\_\_ ALL STREETS \_\_\_\_\_ ALLEYS \_\_\_\_\_

RESID. ALLEYS \_\_\_\_\_ PARKING LOTS \_\_\_\_\_

TRUCK # 3 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_ Gallons of Brine \_\_\_\_\_

TRUCK # 5 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK # 6 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK #10 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK #18 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK #22 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_ Gallons of Brine \_\_\_\_\_

TRUCK #30 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_

TRUCK #33 LOADS SALT: \_\_\_\_\_ SAND \_\_\_\_\_ Gallons of Brine \_\_\_\_\_

**Plow Vehicles**

<b>Vehicle</b>	<b>Capabilities</b>
<b>Truck #3 2000 Sterling LT-8513</b>	<b>Plow, Wing, Salt, Brine</b>
<b>Truck #18 2007 Sterling LT8513</b>	<b>Plow, Wing, Salt, Brine</b>
<b>Truck #30 2017 International 7400</b>	<b>Plow, Wing, Salt, Brine</b>
<b>Truck #S6 2020 Western Star 4700 SF</b>	<b>Plow, Wing, Salt</b>
<b>Truck #S5 1999 Sterling</b>	<b>Plow, Wing, Salt</b>
<b>Truck # 22 2012 International Maxx Force</b>	<b>Plow, Wing, Salt</b>
<b>Grader #S13 2019 Cat 12M3</b>	<b>Plow, Wing, V-Plow</b>
<b>Loader #S15 Volvo L90H</b>	<b>Plow, Wing, Blower</b>
<b>Loader #S1 2001 Volvo L90D</b>	<b>Plow, Pusher Plow</b>
<b>Loader # S12 2009 John Deere 624-K</b>	<b>Plow, Wing</b>
<b>Truck #S10 2019 Ford F-550</b>	<b>Boss Plow, Salt</b>
<b>Truck #M3 2017 Ford F-250</b>	<b>Boss Plow</b>

<b>Truck #P9</b> <b>2016 Ford F-250</b>	<b>Boss Plow</b>
<b>Truck #P7</b> <b>2006 Chevy 3500</b>	<b>Boss Plow</b>
<b>S64</b> <b>2005 Trackless MT</b>	<b>Blower</b>
<b>S65</b> <b>2019 Trackless Series 7</b>	<b>Blower</b>
<b>S20</b> <b>Trackless Series 6</b>	<b>Blower</b>

## **Snow Ordinances**

### **8.04 - Snow and ice removal.**

- (1) All sidewalks shall be kept clean of snow and ice at the expense of the lots and parts of lots abutting thereon. If the owner or occupant of such lot or part of lot shall suffer snow or ice to remain upon any sidewalk abutting thereon for 24 hours after snow ceases to fall, the foreman of the street department shall proceed forthwith, without any order or notice to such owner or occupant, to cause the snow and ice to be removed. The expense thereof shall be assessed against the abutting property.
- (2) No person shall deposit, or cause to be deposited, directly or indirectly, snow or ice from private property upon the city right-of-way, streets, alleys, parking lots, docks or other property.

### **7.07 - All-night parking prohibited.**

No operator of any vehicle shall park such vehicle upon any street within the city between 2:00 a.m. and 6:00 a.m. during December, January, February and March. Notice of such regulation shall be given by posting signs as prescribed by the state department of transportation.

### **7.075 - All-night parking permits.**

Application for a permit for all-night parking during all or any part of the months of December, January, February and March shall be made in the form prescribed by the city engineer and may be obtained from his/her office. The city engineer, or his/her designee, shall review all requests and may issue a permit upon terms and conditions which seem necessary to him/her. The city engineer, or his/her designee, may revoke an all-night parking permit upon his/her determination that a term or condition of the permit has been violated.

## SAND BARRELS

### EAST SIDE

3rd & Jefferson  
3rd & Kentucky  
3rd & Louisiana  
3rd & Michigan - 1  
4th & Jefferson  
4th & Michigan  
5th & Jefferson  
5th & Michigan  
8th & Delaware  
8th & Georgia - 1  
14th & Rhode Island  
Erie Street (Sunset School)  
821 Superior St.  
1st & Michigan near the bridge

### WEST SIDE

Joliet & Hickory  
Joliet & Juniper  
Joliet & Maple  
Madison & Redwood  
Maple & Lansing  
Maple & Madison -1  
Oak & Lansing  
Oak & Madison  
Pine & Lansing  
Pine & Madison  
Willow Drive (Sawyer School)  
Corpus Christi Parking Lot (upper)  
N. Duluth & N. Duluth Place  
Dead end on North Joliet  
Maple & Fulton

## 2.01 - Membership.

### (1) Generally.

- (a) The mayor and alderpersons shall constitute the common council.
- (b) The mayor shall not be counted in determining whether a quorum is present at a meeting but may vote in case of a tie.
- (c) When the mayor does vote in case of a tie, his/her vote shall be counted in determining whether a sufficient number of the council has voted favorably or unfavorably on any measure.
- (d) The council shall be the judge of the election and qualification of its members, may compel their attendance, and may fine or expel for neglect of duty.
- (e) A majority of all the members shall be necessary to a confirmation. In case of a tie, the mayor shall have a casting vote as in other cases.

### **Proposed new language to Code**

#### (2) Replacing Vacant Aldermanic Seat:

- (a) Upon notification by an Alderperson to the Mayor that the Alderperson will be unable to fill out their entire term, the Mayor shall.
  - 1. As soon as reasonably possible, notify the City Administrator of the pending vacancy.
  - 2. The City Administrator and or City Clerk will solicit interested applicants to fill the vacancy.
  - 3. The process for interested citizens to apply shall take no longer than 14 business days from the last day of the vacating Alderpersons date of departure.
  - 4. If no interested citizens apply, the Mayor may submit a candidate for consideration.
  - 5. At the first regular Common Council Meeting after the application deadline, the applicants will be presented to the Common Council. Each candidate will be given 5 minutes to introduce him/herself.
  - 6. After the candidate presentation, the chair will ask for nominations from the Alder that are present
  - 7. A motion to nominate an individual will require a second in order for that person to become eligible for election to the Council.

8. The chair will ask the body to close nominations after each sitting alder has had a chance to nominate a candidate.
9. If there is just one nomination, the chair will ask for a motion to elect the nominated individual by acclamation.
10. If there are two or more nominations, the chair will ask for a roll call vote and each alder will announce his/her vote.
11. If a candidate gets 4 or more votes, that person will be elected to fill the remaining term of the former alderman.
12. If no candidate gets 4 votes and there will be subsequent rounds of voting until a candidate gets the needed 4 votes.
13. In case of a tie between 2 candidates, the matter will be settled by a coin flip.

(Code 1992, § 2.01)