

CITY COUNCIL STUDY SESSION
Winter Weather Operations
CITY HALL, Fifth Floor
6801 Delmar Blvd.
University City, Missouri 63130
Monday, March 28, 2022
6:00 p.m.

AGENDA

1. MEETING CALLED TO ORDER

At the Study Session of the City Council of University City held on Monday, March 28, 2022, Mayor Terry Crow called the meeting to order at 6:00 p.m.

In addition to the Mayor, the following members of Council were present:

Councilmember Stacy Clay
Councilmember Aleta Klein
Councilmember Steven McMahon
Councilmember Jeffrey Hales
Councilmember Tim Cusick
Councilmember Bwayne Smotherson

Also in attendance were City Manager, Gregory Rose; Attorney, John F. Mulligan, Jr., and Public Works Director, Sinan Alpaslan.

2. CHANGES TO THE REGULAR AGENDA

Mr. Rose stated since some members of the public interested in speaking during the Public Hearing segment of tonight's meeting may not be in attendance due to the elevator being out of service, he would recommend that the Public Hearings for Items I (1) and (3) remain open, and that Item L (2) be removed from the Agenda.

3. WINTER WEATHER OPERATIONS

Mr. Rose stated staff is asking that Council receive a presentation from the Public Works Director regarding the City's standard winter weather operating procedures, as well as any changes.

Mr. Alpaslan stated the following considerations are being presented for Council's review of the City's winter weather operations:

Considerations

- Water main breaks, bridges, and priority areas
- Personnel and equipment
- Means and methods
 - Salt-brine pretreatment
 - Chlorides pre-wetting
 - De-icing operations
- Citizen Communications - CodeRED
- Needed Improvements
 - Training/Technology
 - Snow control no parking regulations

Water Main Breaks can occur during dry weather in the winter and cause icing hazards on roadways. Staff collaborates with Missouri American Water when responding to these occurrences since they are responsible for the public water supply. Water temperatures impact infrastructure and the City has experienced an increasing trend of these occurrences during the winter.

Private waterline repairs are the responsibility of the property owner. To ensure prompt action, the City will guide an owner through the County's sewer lateral process or whenever necessary collaborate with the Planning and Development Department to take enforcement actions.

Bridges are a high priority during winter months since they are exposed to the cold air above and below the surface causing them to become icy; the taller the bridge, i.e., Old Bonhomme Rd. over I170, the greater the concern.

Other Priorities Consist of:

- Access to the municipal yard
- Hilly roads
- Delmar Loop commercial zone
- Active solid waste collection routes
- Emergency calls to assist police

Snow Route Map

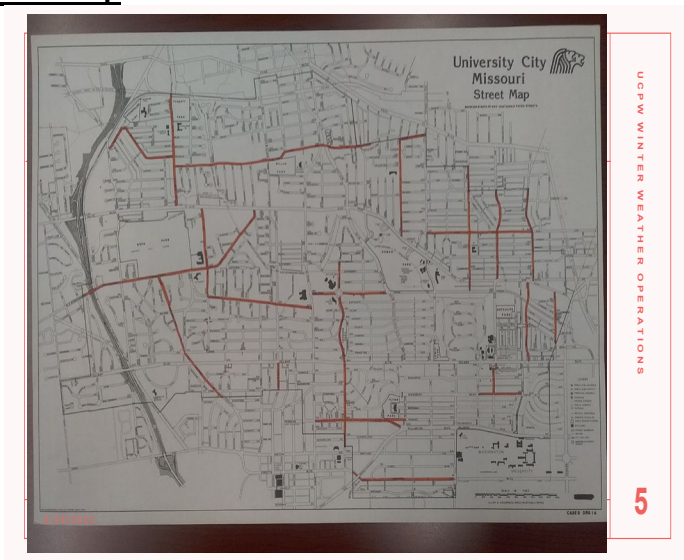
Region 1: above the Olive region; *(consists of 2 units)*

Region 2: Olive and Delmar; *(1 unit)*

Region 3: below the Delmar region; *(includes the Delmar Loop commercial zone); (2 units).*

Unit assignments are based on each geographical area. Public Works has five available units in terms of staffing, and when a unit completes Regions 1 and 3, they are asked to supplement Region 2.

City Street Map



The map illustrates through streets and streets that provide through access. These streets consist of 15 centerline miles out of the City's 81 centerline mile network. Through-streets branch out into all of the neighborhoods and connect to County and State arterials.

The City's practice does not always include prioritizing through streets; although, the February 3rd storm presented a real challenge due to the excessive rate of snowfall.

Personnel and Equipment

- Before a snow event, pretreatment is completed for the whole network depending on the weather forecast:
 - If rain precedes snow events, pretreatment with salt may be more effective, otherwise, pretreatment with salt-brine is utilized.

- During and after a snow event, personnel is assigned with equipment to Regions for de-icing:
 - Plow and spread salt; *(if conditions allow, salt-brine is utilized)*.
 - If temp stays cold and drops further, staff will focus on plowing and spreading salt behind it.
 - If temps fluctuate above and below freezing, staff will focus on de-icing/anti-icing with salt; *(if conditions allow, salt-brine)*.

Currently, Public Works does not have enough equipment to treat the City's entire street network with salt brine.

Salt-Brine Means and Methods

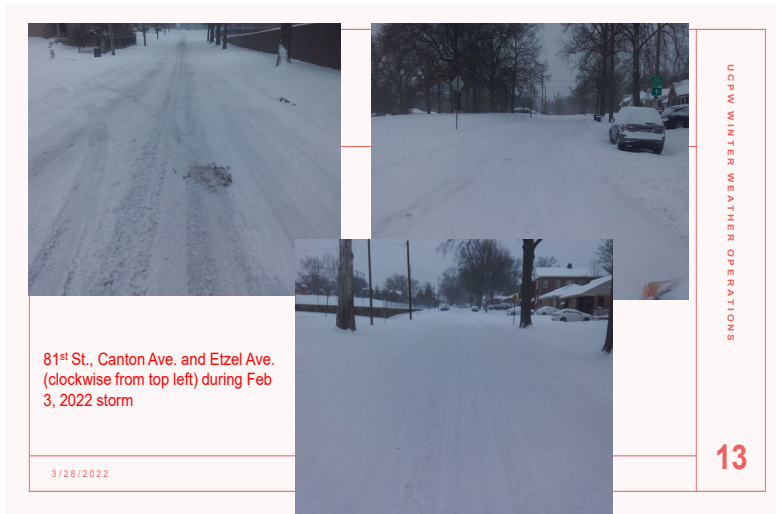
- Made in the shop by mixing salt with water to create a liquid de-icer; *(typical 23% salt solution)*
- Sprayed on roadways before the forecasted winter weather system arrives, if temps hold above 20 F
- Prevents snow from sticking, aids plowing, and allows the road to dry quicker
- There is a Brine-maker in-house at the municipal yard, which is filled into a 250 gal. Tank on a pick-up and a 750 gal. Tank on a dump truck. This is a gravity-fed system, so little maintenance is required; *(assembled by U. City Fleet)*

Cl (Chloride) Pre-Wetting Means and Methods

- Currently, Calcium Chloride is not in Public Works' arsenal but it can easily be added.
- Applied with saddle tanks used on dump trucks to spray Chlorides on salt when dropping through a spinner
- Salt brine or Calcium Chloride are options; *(Salt brine's effectiveness is reduced at 20 F and below)*
- Any pre-wetting helps with reducing salt bouncing off the pavement to the side and increases de-icing's effectiveness while permitting lower salt application rates; *(up to 30%)*
- Plowing is still key. U City's rule-of-thumb is to plow first if there is any accumulation and follow up with a salt treatment. Materials remaining on the pavement benefit pre-treatment efforts for later events.

De-icing Ops Means and Methods

- Salt does not actively de-ice unless it goes into a liquid or brine state
- Applying road salt after the snow has fallen (top-down app.) takes more time and salt along with lower layers of snow stuck to the pavement
- Pretreatment of the road before winter storm (also called "anti-icing") allows public works to melt snow bottom-up and reduces snow/ice build-up
- U City's brine formulation can be "tuned" to specific needs, such as including calcium chloride to improve performance at colder temps or beet juice, to extend the longevity of the anti-icing effect after application. To date, the department has not had any experience with beet juice
- This formulation can also be used for de-icing operations together with plowing during and after the event



These streets needed another passage of the plow and de-icing application material to ensure that the pavement surface was under control.

Citizen Communications - CodeRED

- A new system is being launched for emergency communications
- Can be utilized in the future for local winter weather alerts/advisories
- Subscription needed by citizens; (*opt-in system*)
- Can advise of ongoing-upcoming operations and facility-program closures based on the weather

Needed Improvements

- Annual refresher/new staff training in plowing operations and equipment calibration
- Assignment of the same region to the same employee group to increase familiarity, and create a greater sense of accountability in well-performed operations
- Reliable tools and resources with maintenance support throughout round-the-clock operations
- Possible technology enhancements with Geographic Positioning Systems (GPS), so operators are aware of previous work status. Vehicle telematics/track routing software increases efficiency
- “Live edge” plows conforming to the shape of the road to reduce the use of salt
- More localized weather forecasts to anticipate needs
- On streets narrower than 28 feet, snow event parking restriction on one side can increase operational safety/effectiveness, especially after an event where snow is still on the ground and on-street parking is needed

Mr. Rose stated that about ten years ago Public Works departments stopped using calcium chloride for de-icing. But today, this process is being used throughout the region. So, based on his belief that there needed to be a better balance between safety issues that place streets in the safest position possible, he directed Mr. Alpaslan to reinstate this process.

Councilmember Cusick posed the following questions to Mr. Alpaslan:

Q. Could you explain what is meant by 81 and 15 centerline miles of the City's network?

A. Eighty-one and 15 represent the linear mileage within the City's street network as displayed on the map.

Q. Is it correct that your department is not responsible for maintaining or cleaning the state and counties roads that run through U City?

A. That is correct.

Q. Is it also correct that Olive is a state-owned street, and Delmar, Hanley, North and South, and Midland are county-owned streets?

A. That is correct.

Q. How long does it take the County and State to start their de-icing process for these roads?

A. The County's network is much more extensive than the State's, so their response time is good. Olive is at the end of the State's network and does not serve any of their roadways, so their response is somewhat delayed. But when that occurs, his department will step in and plow the street.

Q. Are there any environmental impacts as a result of the different chemicals you use?

A. Granular salt is probably the most harmful material in terms of waterways and the environment, but any one of the liquid de-icings will help to reduce those salt application rates. In some instances, Calcium could be viewed as an environmental hazard, which is why it is only used to address specific safety conditions.

Councilmember Clay posed the following questions to Mr. Alpaslan:

Q. Could you talk about the communication techniques utilized by the CodeRED Program?

A. CodeRED disseminates information through text messaging, which makes it effective in the sense that it can include important emergency notifications from the City's Fire, Police, and Public Works Departments. It can also be customized to inform different clusters within the City's population and allow subscribers to receive specific alerts related to their interests, like recreational program updates.

Q. When do you anticipate this program will be up and running?

A. At this point, I am not exactly sure.

Mr. Rose stated he anticipates that the system will be up and running within the next three weeks. He stated the ideal scenario would be for every household to sign up for this program. So, for the past three weeks, the *Weekly Community Report* has been promoting the significance of CodeRED and providing a link where residents can go to sign up. Residents can also contact the Assistant City Manager to assist them in signing up.

Councilmember Smotherson asked where the 1300 block of Purdue, which has a steep incline, falls in their list of priorities when it comes to plowing and de-icing?

Mr. Alpaslan stated while the northeastern section of the City is an area that should be prioritized based on the perilous nature of its roadways, his department struggled with maintaining those streets during the last storm event. He stated his hope is that this can be rectified through the execution of additional training.

Mayor Crow asked how many streets fell under the category of being 28 feet wide or less? Mr. Alpaslan stated after Northmore Drive which is their biggest challenge, there are probably five or six additional blocks.

4. ADJOURNMENT

Mayor Crow thanked Mr. Alpaslan for his presentation and adjourned the Study Session at 6:28 p.m.

Respectfully Submitted,

LaRette Reese,
City Clerk

