

REPORT TO: Mayor and Members of Council

DATE: January 12, 2022

FROM: Greg Storms

SUBJECT: Winter Operations Report

RECOMMENDATION:

For Council's Information

BACKGROUND:

The Winter Operations Plan sets out a policy and procedural framework for ensuring that the Municipality of Southwest Middlesex continuously improves on the safe and sustainable delivery of winter maintenance services. This plan supersedes all previous plans for the Municipality of Southwest Middlesex.

The plan is meant to be dynamic, to allow the Municipality to evaluate and phase in any changes, new approaches and technologies in winter maintenance activities in a fiscally sound manner. At the same time, any modifications to municipal winter maintenance activities must ensure that roadway safety is not compromised.

FINANCIAL IMPLICATIONS:

This level of service is supported by the Operational Budget for the Department.

OPERATIONAL IMPLICATIONS:

No operational Implications.

RELATIONSHIP TO STRATEGIC PLAN:

- Sponsoring attractive municipal services in a rural setting.
- Promoting & continuing to develop communities that are appealing places to live, work & play
- Upholding a healthy & safe environment

Respectfully submitted

Greg Storms

Public Works Manager

Municipality of Southwest Middlesex

Contents

PURPOSE.....	3
DEFINITIONS	3
1.0. OBJECTIVE OF WINTER OPERATIONS MANAGEMENT.....	5
2.0. POLICY STATEMENT.....	5
3.0. QUICK OVERVIEW OF THE MUNICIPALITY OF SOUTHWEST MIDDLESEX	5
4.0. WINTER MAINTENANCE PROGRAM	6
4.1. The System Maintained	6
4.2. Level of Service.....	6
4.2.1. Snow Accumulation and Ice Formation Policy	6
4.2.2. Sidewalk Responsibility	8
4.2.3. Private properties.....	8
4.3. Winter Season Maintenance.....	8
4.4. Winter Preparations.....	9
4.4.1. One Month Prior to the Winter Season	9
4.4.2. Two Weeks Prior to the Winter Season	9
4.4.3. At the Start of the Winter Season	9
4.5. Winter Patrol.....	10
4.6. Operations.....	10
4.6.1. Winter Material Used Annually.....	10
4.6.2. Plow Routes.....	11
4.6.3. Mechanics.....	11
4.6.4. Winter Maintenance Facilities.....	11
4.6.5. Public and Private Parking Areas.....	11
4.6.6. Weather Monitoring.....	12
4.6.7. Significant Weather Event	12
4.6.8. Communications.....	12
4.6.9. Boundary, Street Jurisdiction and Responsibility	12
4.6.10. Callout Procedures	13
4.6.11. Road Closures and Procedures.....	13
4.7. Decommissioning Winter Operations	13
4.7.1. Two weeks after the winter season ends.....	14
4.7.2. One month after the winter season ends	14
4.8. Training	14
5.0. PLAN IMPROVEMENTS	14
6.0. MONITORING AND UPDATING	14

WINTER OPERATIONS PLAN: JANUARY 2022



PURPOSE

This winter operations plan sets out a policy and procedural framework for ensuring that the Municipality of Southwest Middlesex continuously improves on the safe and sustainable delivery of winter maintenance services and the effective and efficient use of road salt in their winter maintenance operations. This plan supersedes all previous plans for the Municipality of Southwest Middlesex.

The plan is meant to be dynamic, to allow the Municipality to evaluate and phase in any changes, new approaches and technologies in winter maintenance activities in a fiscally sound manner. At the same time, any modifications to municipal winter maintenance activities must ensure that roadway safety is not compromised.

The Winter Operations Plan for the Municipality of Southwest Middlesex was endorsed by Municipal Council in 2020.

DEFINITIONS

Continuous Winter Event Response is a response to a winter event with full deployment of manpower and equipment of manpower.

Crew Leader is the person who is on duty at the time directing the snow/ice removal operations of the Municipality of Southwest Middlesex. These individuals include; Public Works Supervisor, Drainage Superintendent or any other individual who may be assigned the responsibility of Crew Leader.

De-Icing means the application of solids, liquids, pretreated material to the road surface after the onset of the winter event.

Highway means a common and public highway, street, avenue, parkway, square, place, bridge, viaduct or trestle, any part of which is used by the general public for the passage of vehicles and includes the area between the lateral property lines thereof.

Paved Road means a road with an asphalt surface, concrete surface, composite pavement, or Portland cement.

Pre Treat means the application of liquids, to dry salt or sand that is applied before or leading up to a winter event.

Salt Route is a collection of road segments, which during a winter storm will receive applications of salt and sand mixture to prevent the formation of a bond between snow and pavement, or if such a bond has already formed, to break that bond. Typically, such routes have some sort of bare pavement level of service. Under certain circumstances (where temperatures hinder the effectiveness of salt) sand may be applied to such routes to provide a temporary increase in grip.

Sand Route is a collection of road segments which during a winter storm will receive applications of sand/salt mixture to provide a temporary increase in grip. Typically, such routes include gravel and other unpaved roads, where the use of salt or other freeze depressant materials might impact road stability. The level of service on such routes would not have bare pavement as a service goal.

Spot Winter Event Response is a response to a winter event with only a partial deployment of manpower and equipment or with full deployment to only part of the system.

Surface Treated Road is a road with bituminous surface treatment comprised of one or two applications of asphalt emulsion and stone chips over a gravel road.

Unpaved Road is a graded road with a gravel, stone or other loose travelling surface.

Winter Event is a weather condition affecting roads such as snowfall, windblown snow, freezing rain, frost or ice to which a winter event response is required.

Winter Event Response is a series of winter control activities performed in response to a winter event.

Significant Winter Event is defined in the Minimum Maintenance Standards as a declaration by a Municipality which puts the MMS in a state of repair. This type of event prevents litigation against the Municipality and its contractors until the Significant Weather Event has been lifted.

MMS or Minimum Maintenance Standards are minimum standards that have been created under the Municipal Act for the clearance of snow and ice.

1.0. OBJECTIVE OF WINTER OPERATIONS MANAGEMENT

The Municipality of Southwest Middlesex is committed to providing safe and sustainable winter maintenance operations while continuing to improve those operations to provide safety and mobility for the travelling public. As an integral part of this effort, the Municipality will strive to optimize the use of all winter maintenance materials and equipment as they pursue the goal of a safe sustainable transportation system.

The Municipality of Southwest Middlesex public works staff will strive insofar as reasonably practicable, to provide safe winter road conditions for vehicular and pedestrian traffic as set out in the level of service policies and within the resources established by council of the Municipality of Southwest Middlesex.

Our goal is to provide a high level of service by servicing all our roadways at least once per day. This will ensure that all residents will have the ability to get to work, buses can pick up children and EMS and Fire Department will have reasonable access to all properties in Southwest Middlesex.

2.0. POLICY STATEMENT

The Municipality of Southwest Middlesex will conduct safe and sustainable snow fighting to ensure, insofar as reasonably practicable, the safety of users of the Municipal road network in keeping with applicable provincial legislation and accepted standards while striving to minimize adverse impacts to the environment. These commitments will be met by:

- Adhering to the procedures contained within the Winter Operations Plan
- Reviewing and upgrading the Winter Operations Plan on an annual basis to incorporate new technologies and new developments
- Committing to ongoing winter operations staff training and education
- Monitoring on an annual basis, the present conditions of the winter maintenance program, as well as the effectiveness of the Winter Operations Plan

3.0. QUICK OVERVIEW OF THE MUNICIPALITY OF SOUTHWEST MIDDLESEX

Type of Organization:	Ontario Municipality
Structural Level:	Township
Estimated Population:	5000 (2016 Census)
Street Address:	153 McKellar St, Glencoe
Telephone:	519-287-2015
Website:	www.southwestmiddlesex.ca
Public Works Supervisor:	Rob Cole
Crew Leader:	Burt Powers
Ontario Provincial Police:	519-245-2323

4.0. WINTER MAINTENANCE PROGRAM

4.1. The System Maintained

The major activities related to winter maintenance are:

- Snow plowing
- Salt/sand application
- Snow removal
- Sidewalk plowing and de-icing
- Plowing of publicly owned facilities
- Downtown snow removal

The Municipality of Southwest Middlesex is responsible for Winter Maintenance on:

Road Category Class

Road Category	Class	Distance
Paved & Rural	4	30.3 KM
Paved & Urban	5	23.6 KM
Unpaved & Rural	6	362.3 KM
TOTAL KM OF ROADWAY		416.2 KM

4.2. Level of Service

The Municipality of Southwest Middlesex provides the following level of service during the winter maintenance season, as set out in schedule 4.3 in response to a winter event.

The minimum standard for clearing snow accumulation is as follows:

4.2.1. Snow Accumulation and Ice Formation Policy

Snow Accumulation

Class of Highway	Depth of Snow	Time
Class 1	2 cm of snow	4 Hours
Class 2	5 cm of snow	6 Hours
Class 3	8 cm of snow	12 Hours
Class 4	8 cm of snow	16 Hours
Class 5	10 cm of snow	24 Hours
Class 6	15 cm of snow	48 Hours

Ice Formation

Class of Highway	Time
Class 1	3 Hours
Class 2	4 Hours
Class 3	8 Hours
Class 4	12 Hours
Class 5	16 Hours
Class 6	24 Hours

The standard for addressing snow accumulation is:

After becoming aware of the fact that the snow accumulation on a roadway is greater than the depth set out in the Table to this section, to deploy resources as soon as practicable to address the snow accumulation; and

After the snow accumulation has ended, to address the snow accumulation so as to reduce the snow to a depth less than equal to the depth as set out in the Table within the time set out in the Table (Snow Accumulation)

- 4.2.1.1. To provide a minimum lane width of the lesser of three meters for each lane of at least five meters. O Reg 47/13, s 4.
- 4.2.1.2. On a Class 4 or 5 highway with two lanes, to provide a total width of at least five meters. O reg 47/13 s,4.

If the depth of snow accumulation on a roadway is less than or equal to the depth set out in the Table to this section, the roadway is deemed to be in a state of repair with respect to snow accumulation O Reg 47/13,s 4.

For the purposes of this section, the depth of snow accumulation on a roadway and, if applicable, lane width under subsection 1 (b), may be determined in accordance with subsection (4) by a municipal employee, agent or contractor, whose duties or responsibilities include one or more of the following.

- Patrolling highways
- Performing highway maintenance activities
- Supervising staff who perform activities described in para 1 or 2. O Reg 47/13 s, 4

The depth of snow accumulation on a roadway and lane may be determined by:

- Performing an actual measurement
- Monitoring the weather; or
- Performing a visual estimate. O Reg 47/13, s 4

For the purposes of this section, addressing snow accumulation on a roadway includes, but is not limited to:

- Plowing a roadway
- Salting a roadway
- Applying abrasive material to the roadway; or

- Any combination of the methods described in previous clauses

This section does not apply to that portion of the roadway designated for parking. O Reg 47/13.

If at any time a Municipality declares a weather emergency (Significant Weather Event), then all roadways within the Municipality are deemed to be in a state of repair of any snow accumulation present, until the applicable time under the Table to this section expires following the end of the declared weather emergency.

Our goal is to get to all our roads daily to ensure access for school buses, EMS, Fire and so people have as little trouble to get to work.

The standard for attempting the prevention of ice formation on roadways is doing the following in the 24-hour period preceding an alleged formation of ice on a roadway:

- Monitor the weather in accordance with Section 3.1.
- Patrol in accordance with Section 3.
- If the Municipality determines, as a result of its activities under paragraph 1 or 2, that there is a substantial probability of ice forming on a roadway, treat the roadway to attempt to prevent ice formation within the time frame set out in the Table to this section, starting from the time that the Municipality determines is the appropriate time to deploy resources for that purpose. O Reg, 47/13, s 5.

If the Municipality meets the standard set out in subsection (1) and despite such compliance, ice forms on a roadway, the roadway is deemed to be in a state of repair until the earlier of;

- The time that the Municipality becomes aware of the fact that the roadway is icy; or
- The applicable time set out in the Table of this section for treating the roadway to prevent ice formation expires. O Reg 47/13, s 5.

The standard for treating icy roadways after the Municipality becomes aware of the fact that a roadway is icy is to treat the icy roadway within the time set out in the Table to this section, and an icy roadway is deemed to be in a state of repair until the applicable time set in the Table for treating the icy roadway expires. O Reg 47/13, s 5.

For the purpose of this section, treating a roadway means applying material to the roadway including but not limited to, salt, sand or any combination of salt and sand.

4.2.2. Sidewalk Responsibility

The Municipality of Southwest Middlesex contracts the removal of Sidewalk snow in Melbourne and Wardsville to local contractors, but is responsible for sidewalk snowplowing in Glencoe and Appin.

4.2.3. Private properties

Private properties are the responsibility of the respective owners.

4.3. Winter Season Maintenance

For Operational purposes the Municipality of Southwest Middlesex assumes the winter season commences on November 1st and is completed by April 15th the following year.

4.4. Winter Preparations

In the months prior to the start of the winter maintenance season, as identified in 4.3 the Municipality of Southwest Middlesex undertakes the following tasks to prepare for the upcoming winter season.

Prior to the winter season, if required, prepare and call for pricing on sand and salt, replacement parts for plows, application equipment, meteorological information services, and any contract equipment.

Sometime prior to the winter season the Municipality of Southwest Middlesex will:

- Conduct a mandatory training session for staff operators where all policies, procedures, schedules, reporting procedures for callout, route maps, equipment training and safety precautions will be discussed. Any issues resulting from the meeting with regard to the policies, procedures, schedules, reporting procedures for callout, route maps, equipment training and safety precautions shall be resolved at either the meeting or prior to the winter season.
- Inspect equipment to ensure proper working order. Schedule and complete all equipment repairs.
- Arrange the delivery of materials, salt and sand
- Confirm that all guiderail, catch basin, hazard and fire hydrant marker are in place. Any missing markers should be replaced prior to the winter season.

4.4.1. One Month Prior to the Winter Season

One month prior to the winter season, the Municipality of Southwest Middlesex will:

- Assign equipment to staff
- Calibrate material application equipment
- Allow operators time to familiarize themselves with any new equipment, material application rates, material application equipment and their particular route
- Monitor and record weather forecasts on a daily basis
- Have 20% of the fleet ready to respond to a winter event
- Have sufficient staff available to operate the fleet if conditions warrant a winter event response

4.4.2. Two Weeks Prior to the Winter Season

Two weeks prior to the winter season, the Municipality of Southwest Middlesex will:

- Begin regular patrol of road system
- Have 70% of the fleet ready to respond to a winter event
- Have staff available to operate the required complement of the fleet if conditions warrant a winter event response

4.4.3. At the Start of the Winter Season

At the start of the Winter Season, the Municipality of Southwest Middlesex will:

- Begin patrolling representative roads in all roads/areas that the organization is responsible for

- Respond to winter events as per the winter operations plan

4.5. Winter Patrol

All Winter Patrol is performed by the Crew Leader to determine the staff and equipment response.

4.6. Operations

The Municipality of Southwest Middlesex adheres to the hours of service as dictated by Highway Traffic Safety Act, On Reg 555/06 (Ontario, Canada)

Staffing for Winter Maintenance:

Name	Position
Rob Cole	Public Works Supervisor
Burt Powers	Crew Leader
Greg Lambert	Road Worker
Greg Roose	Road Worker
Greg Henry	Road Worker
Rosie Woldenberg	Road Worker
John Walls	Road Worker
TBD	Road Worker
Jeff Tidball	Equipment Operator
Jim McEachren	Equipment Operator
Reg Clark	Equipment Operator

Some of the key responsibilities associated with the management and overseeing of winter operations for the winter season are as below:

- Crew Leader will receive issues and concerns of the citizens regarding snow and ice control efforts
- Crew Leader will be responsible for making operational decisions
- Crew Leader will be the authority to which the field staff will communicate the field conditions to
- Crew Leader will be responsible for shift scheduling
- Crew Leader will be responsible for providing appropriate signage and or barricades in case a road has to be closed due to severe weather

4.6.1. Winter Material Used Annually

The Municipality of Southwest Middlesex uses a Bulk Salt/Sand Mixture.

- 320 tonnes of salt are used annually
- Sand is mixed at 80% sand to 20% salt ratio
- 3200 tonnes of sand is used annually
- Equipment-Winter Maintenance Fleet

The Municipality of Southwest Middlesex uses various pieces of snow removal equipment during winter events.

- Backhoe (1)
- Motor Grader's (2)
- Tandem Trucks (3)
- Single Axle Truck (2)
- Front End Loader (1)
- Trackless (1)
- Pick Up Trucks (2)

4.6.2. Plow Routes



4.6.3. Mechanics

The Municipality of Southwest Middlesex does not have mechanics available to fix equipment issues.

4.6.4. Winter Maintenance Facilities

The Municipality of Southwest Middlesex provides winter maintenance services from the following facilities.

- **Glencoe Public Works Garage**
266 Appin road Glencoe, Ontario N0L 1M0
- **Appin Public Works Garage**
Richmond Street Appin, Ontario N0L 1A0

4.6.5. Public and Private Parking Areas

The Municipality of Southwest Middlesex plows public parking areas in Glencoe, which include the Old Library, New Library, Train Station, McKellar Public Parking and Township Office.

The Municipality of Southwest Middlesex does not plow any private property parking areas.

The Municipality is also responsible for the removal of snow in Glencoe, Wardsville and Melbourne. We will continue to use best efforts and provide this service with Municipal staff. In cases where this is not possible, a contractor has been secured to perform this service. It is important to remember that Municipal staff can work 13 hours in a day and cannot exceed 70 hours per week without a 36-hour rest period.

4.6.6. Weather Monitoring

In order to determine an effective winter event response and allocate appropriate resources the Municipality of Southwest Middlesex supplements their general observations with weather information from the following sources.

- Meteorological Services
- Weather Network
- Environment Canada
- Acu Weather
- OGRA Weather Tracking Services

The Crew Leader also communicates with adjacent Municipalities and adjoining Counties.

4.6.7. Significant Weather Event

As part of the changes to the MMS (Minimum Maintenance Standards) the Municipality can and may declare a Significant Weather Event.

A Significant Weather Event can be declared by posting information on our website and Facebook page notifying the community of this Significant Event.

Once a Significant Weather Event has been declared this relieves the Municipality of any standard as set out in the MMS.

Once the event has passed, the Significant Weather Event can be removed by posting notice on our website and Facebook page.

4.6.8. Communications

Maintaining reliable internal communications is a critical component of winter operations. The Municipality of Southwest Middlesex uses the following:

All winter maintenance vehicles are equipped with two-way communications (radios, cell phones) etc.

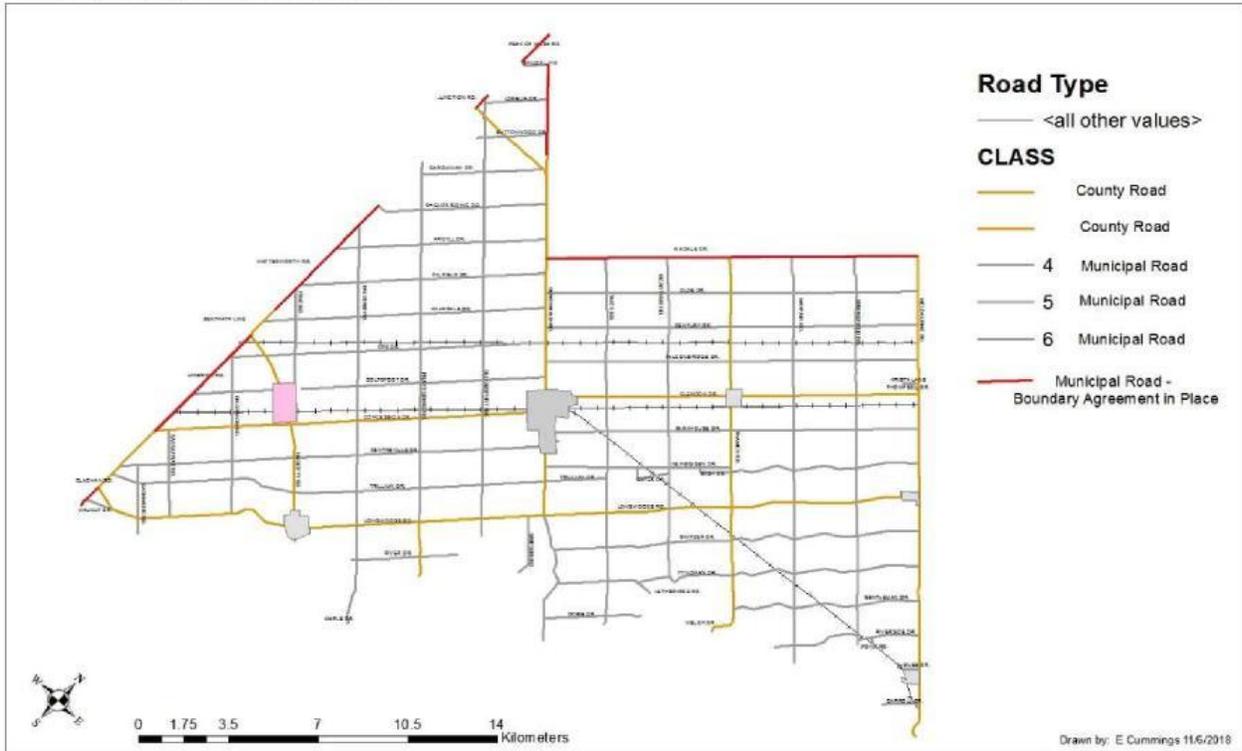
Normal operations of the Municipal Office are available for residents to call and identify issues.

All citizen issues concerning snow and ice control efforts will be routed to the Crew Leader. The Crew Leader will determine appropriate follow up responses to citizen inquiries.

The Municipality of Southwest Middlesex provides external communication with the general public via, media releases, website, and Facebook page.

4.6.9. Boundary, Street Jurisdiction and Responsibility

Southwest Middlesex Road Network



4.6.10. Callout Procedures

Operational decisions will be made by the Crew Leader or his/her designate with the aid of available forecasting. Level of Service policy, patrolling etc. However, it should be emphasized that decisions will be subjective and external input, whether in this plan or elsewhere, merely acts as an aid in determining if a call out of staff and equipment by the Crew Leader to respond to a winter event is warranted.

It is vital therefore that the Crew Leader records the conditions and relevant information when he/she makes a decision.

4.6.11. Road Closures and Procedures

In the event a road must be closed due to severe weather, Ontario Provincial Police will request signs to be placed. Appropriate signage and barricades will be available at the patrol yard. Upon receiving a request from the Ontario Provincial Police to close a road to traffic, the Crew Leader will organize staff and equipment to place signs and barricades.

Administration staff will assist in inputting this information to the website and Facebook page to keep the public updated.

At any point if it is deemed by the Crew Leader that snow plowing activities are too dangerous for staff and the general public the units will be taken off of our roadways and will be idle until conditions are safe for work.

4.7. Decommissioning Winter Operations

After the winter season as identified expires, the Municipality of Southwest Middlesex undertakes the following tasks to decommission winter operations.

4.7.1. Two weeks after the winter season ends

Two weeks after the winter season ends:

- Continue monitoring and recording weather forecasts
- Assign Road Patrol shift if forecast indicates an overnight winter event is probable

4.7.2. One month after the winter season ends

One month after the winter season ends:

- Cease all winter highway maintenance operations
- Decommission the remainder of the equipment providing weather forecasts warrant the decommissioning

4.8. Training

The Municipality of Southwest Middlesex provides winter operations training for all staff involved in the delivery of winter services.

Individuals in the following positions within and outside of the organization have been trained.

- PW Crew leader
- PW Road workers
- PW Operators
- All contractors

It is compulsory for the organization's staff to be trained for winter services. This includes full time and part time staff.

Current winter operations training includes

- Equipment circle check
- Equipment calibration
- Record keeping
- Health & safety
- Policies, procedures and legislation
- Identification of plow routes
- Identification of vulnerable areas
- Yard and equipment maintenance

5.0. PLAN IMPROVEMENTS

The current winter maintenance policies, practices and procedures form the baseline or benchmark upon which improvements can be made to improve winter operations.

6.0. MONITORING AND UPDATING

Safe and sustainable winter operations include, as one of its fundamental tenets, the monitoring and updating of winter operations plans, policies, practices and procedures of the Municipality of Southwest Middlesex in an ongoing manner.

At the end of the winter season, a meeting to review winter operations will be held each year with all winter operations staff to itemize all issues that arose during the winter season and discuss how these issues may be resolved. Prior to the start of the next winter season and with sufficient lead-time to implement any changes, the Municipality of Southwest Middlesex shall train staff on the changes to equipment and/or winter maintenance policies, practices and procedures.

7.0. DISTRIBUTION OF THIS PLAN

This plan shall be distributed to the following:

- Mayor and Council
- Chief Administration Officer/Clerk
- Public Works Supervisor
- Public Works Crew Leader
- All Public Works Staff

Report prepared by

Greg Storms, Director of Operations

January 2022

