

2022-2023 Snow and Ice Control Plan

Snow and Ice Control Plan

TABLE OF CONTENTS

GENERAL

- Purpose
- Policy Considerations
- Source
- Policy Statement
- Definitions
- Level of Maintenance

WINTER STORM OPERATIONS

- Responsibilities
- Winter Storm Categories for Operations
- Snow and Ice Control Procedure- Streets
- Snow and Ice control Procedures- Parks
- Materials
- Storm Summary Report

COMMUNICATIONS PLAN

- Statement Objectives
- Internal Communications
- External Communications

SIDEWALKS, DRIVEWAYS, PARKING AND PRIVATE PLOWING

- Sidewalks
- Driveways
- Parking on Snow Routes
- Use of Private Contractors

Appendix

General

Purpose

The purpose of the Plan is to set Policy, Process, and Maintenance Levels for Snow and Ice Control for the City of Sheridan and communicate these expectations to the citizens of Sheridan. The goal of the Public Works Division is to maintain mobility on roadways and pathways. This does not mean pavement will be bare and dry, but will be passable. While the severity of each winter storm is unpredictable, the City will continue to work within its resources to maintain the highest level of customer service possible while balancing efficiency in snow and ice control.

The objective of snow and ice control is to return or maintain road surfaces to safe as possible winter driving conditions as soon as feasible within the limitations of this policy, our limited resources and weather conditions. With proper use of storm forecasts, personnel, equipment, and anti-icing materials, the desired result can usually be attained. However, flexibility is needed to adapt to the variety of circumstances and conditions during a winter event.

Policy Considerations

In developing the policies for how to best undertake winter maintenance activities, several factors must be considered including the following:

- Public safety- Car accidents, slips and falls, damaged property
- Funding- Operate within a reasonable budget
- Resources- The availability of personnel, equipment and subcontractors
- Essential Mobility- Hospital, Police, Fire and Schools
- Commerce- Local businesses, mail, and restaurants
- Quality of life- General daily activities

Sources

Guide for Snow and Ice Control, AASHTO

The Basics of Snow and Ice Control, APWA

Snow fighter's Handbook, Salt Institute

Policy Statement

The snow and ice control objectives of the City are to:

- Maintain its priority roadways, which consist of major and minor arterial streets, access for emergency services, major collector streets, school zones, school bus routes, and business access.
- Provide adequate mobility and safety for vehicles properly equipped for winter driving and prudently operated within a reasonable time after the end of a weather event.
- Provide cost effective snow and ice control services

The City has a commitment to provide effective and efficient winter maintenance to its citizens. However, it must be noted that the following circumstances may prevent or delay snow and ice removal.

- Equipment breakdowns
- Severe weather events that risk the wellbeing of the maintenance crew
- Equipment rendered inadequate by the depths of the snow or drifts
- Parked or stalled vehicles that restrict access
- Unforeseen emergencies

Definitions

Maintenance route – Winter maintenance routes for plowing and sanding and their priority for maintenance during a snow event.

Snow removal route – Winter maintenance routes for clearing and picking up snow from curb to curb after a snow event. These routes may or may not be part of a designated snow route.

Snow route - A designated street that will receive curb-to-curb snow removal when a snow alert is declared. These routes are signed and parked or abandoned vehicles will be towed if left after a snow alert is declared.

Snow alert- A notification to the public indicating the city will commence curb to curb snow removal on selected snow routes.

Citywide snow alert - A notification to the public indicating the city will commence curb to curb snow removal on selected streets that are NOT snow routes.

Vehicle properly equipped for winter driving – For the purposes of this plan, a four wheel drive vehicle or a two wheel drive vehicle with snow tires or tire chains.

Snow and Ice Control Plan

Anti-icer - Dry or liquid material applied to streets to prevent physical bonding of snow and ice to the street surface. This should not be confused with de-icer, which is applied in much higher rates to melt snow and ice that has bonded with the street surface.

Maintenance Routes

Prioritizing streets is a critical component of any Snow and Ice Control Plan. It provides a systematic way to dispatch resources as each storm dictates. Streets will be maintained according to the following priorities. The Maintenance Routes and their criteria are as follows:

Level 1: These roadways are the major arterial streets. Also included are streets that provide access for emergency services such as fire stations, medical facilities and the police department along with chronic icing problems at hills, curves or intersections that are likely to cause traffic accidents. Level 1 streets will be maintained for all snow events.

Level 2: These roadways are minor arterial and major collector streets and are generally streets that connect major arterial streets to residential streets. Also included are streets that provide access to school zones and school bus routes (when in session), major office areas and business areas such as grocery stores and service stations. Level 2 streets will be maintained for all snow events.

Level 3: These roadways are mainly cross streets that connect major collector streets. Also included are collector streets that serve businesses. Priority 3 streets will be maintained for most snow events.

Level 4/Residential: *Four-way intersections controlled by stop signs will be maintained.* These streets will not otherwise be maintained; however, requests for maintenance at specific locations may be made by calling customer service at 307-674-6483. The location(s) will be inspected for snow or ice conditions that warrant attention to eliminate a severe hazard. Generally, locations that will receive attention are limited to hills and intersections with steep grades. Ice build-up in gutters is not a condition that will warrant attention. If attention is warranted, the location(s) will be inspected periodically to determine if the street should be included on a higher level.

If severe winter storm conditions warrant and when directed by the Public Works Director or designee, supplemental snow plowing/removal of residential streets will be initiated.

The Plan's appendix and the City's website, www.sheridanwy.gov, provide the current level and route maps, which shows the streets that will be maintained for snow and ice control operations. Streets that are not color coded on the map are Level 4.

WINTER STORM OPERATIONS

Responsibilities

The Street department is responsible for all roadways and city owned parking lots. The Street Superintendent will monitor the forecast and make appropriate adjustments to accommodate each particular event.

The Park department is responsible for parks, pathways and bridge sidewalks.

Some streets in the City are state and county maintained roads. Snow and ice control on these streets will be performed by the responsible agency.

The equipment maintenance department is responsible for the repair and maintenance of snow removal equipment before, during and after an event.

Winter Storm Categories for Operations

For the purposes of this Plan, winter storms will be categorized into four basic types. The response to the storm varies for each category. The following discussion presents information concerning the service levels maintained and the materials used for each category of storm.

Category I

Predicted Snowfall Amount: Trace – 2 inches

Maintenance Level: Maintain Level 1 and Level 2 routes during the storm. Level 3 and 4 streets are not maintained.

Street treatment may consist of applying brine/geo-brine to streets prior to the onset of the storm. Granular anti-icer may be used depending upon the accumulation and street conditions. Snow plows will be deployed.

Category II

Predicted Snowfall Amount: 2 – 4 inches

Maintenance Level: Maintain Level 1, Level 2 and Level 3 streets during storm. Level 4 streets are not maintained.

Storms at the upper snowfall level of this category will require deployment of more snow plows. Heavy equipment, such as loaders and graders, are not required for storms at this level. Street treatment consists of plowing and applying granular anti-icer during the storm. Brine/geo-brine may be applied to streets prior to the onset of the storm.

Snow and Ice Control Plan

Category III

Predicted Snowfall Amount: 4 – 10 inches

Maintenance Level: Maintain Level 1, and Level 2 streets during storm. Level 3 street maintenance may be limited, depending upon the severity of weather conditions. Level 4 streets are not maintained during the event, but may receive limited maintenance after all other levels have been adequately maintained.

Storms at this level likely require all snowplows. Storms at the upper snowfall level may require heavy equipment such as loaders and graders.

Snow will be removed on all Snow Removal Routes. Street treatment consists of plowing during the heavy snowfall period and transitioning to application of granular anti-icer as snowfall ends and loose snow is removed. Brine/geo-brine may be applied to streets prior to the onset of the storm.



Category IV

Predicted Snowfall Amount: 10 inches or more

Maintenance Level: Level 1 streets are maintained to remain passable during the storm event. Level 2 street maintenance will be limited to completing maintenance after Level 1 streets are maintained. Level 3 and 4 streets will not be maintained during the storm, and may receive limited maintenance until after all other higher Levels have been adequately maintained. Other divisions may be called upon to assist snow and ice control efforts.

This category includes severe winter storms with sufficient snowfall that causes a major disruption in the transportation system. Major roadways, including interstate highways, may be closed. Businesses and schools may also be closed. Storms in this category require all available personnel and equipment and may include contracted snow removal personnel and equipment. During storms of this magnitude, Streets crews will coordinate with law enforcement, fire, and EMS to “clear a path” to locations requiring those services that are not located on streets that are normally being maintained.

Snow and Ice Control Procedure- Streets

Hours of Work

During the winter months, when an event is not expected, the street department will have a typical shift starting at 7:00 am to 3:30 pm on weekdays. Two swing shift operators will work between 2:00 pm and 10:00 pm while two morning shift operators will work between 2:00 am

Snow and Ice Control Plan

and 10:00 am. On the weekends, a designated on-call person will be available. This will ensure there is coverage for an unexpected storm virtually all of the time.

When a snowstorm is predicted, the Streets Superintendent will adjust the crew's schedule so that the correct number of plows can be dispatched continuously for the duration of the event. Employees will be staggered so that there are always plows on the road.

The weather forecast and the predicted intensity of the storm will dictate the required level of staffing for each snow storm. If required, the superintendent can call on other divisions to supply snow plow drivers.

Preparation

The intent of this plan is to establish consistent protocols that will be used throughout the season. However, each meteorological condition presents different difficulties that will dictate exactly how the city will respond to a given storm. A variety of factors are considered when preparing for an upcoming event including:

- Rate and accumulation
- Moisture content
- Presence of sleet and freezing rain
- Temperature before, during and after storm
- Wind velocity
- Time of day
- Storm duration
- Intervals between storms

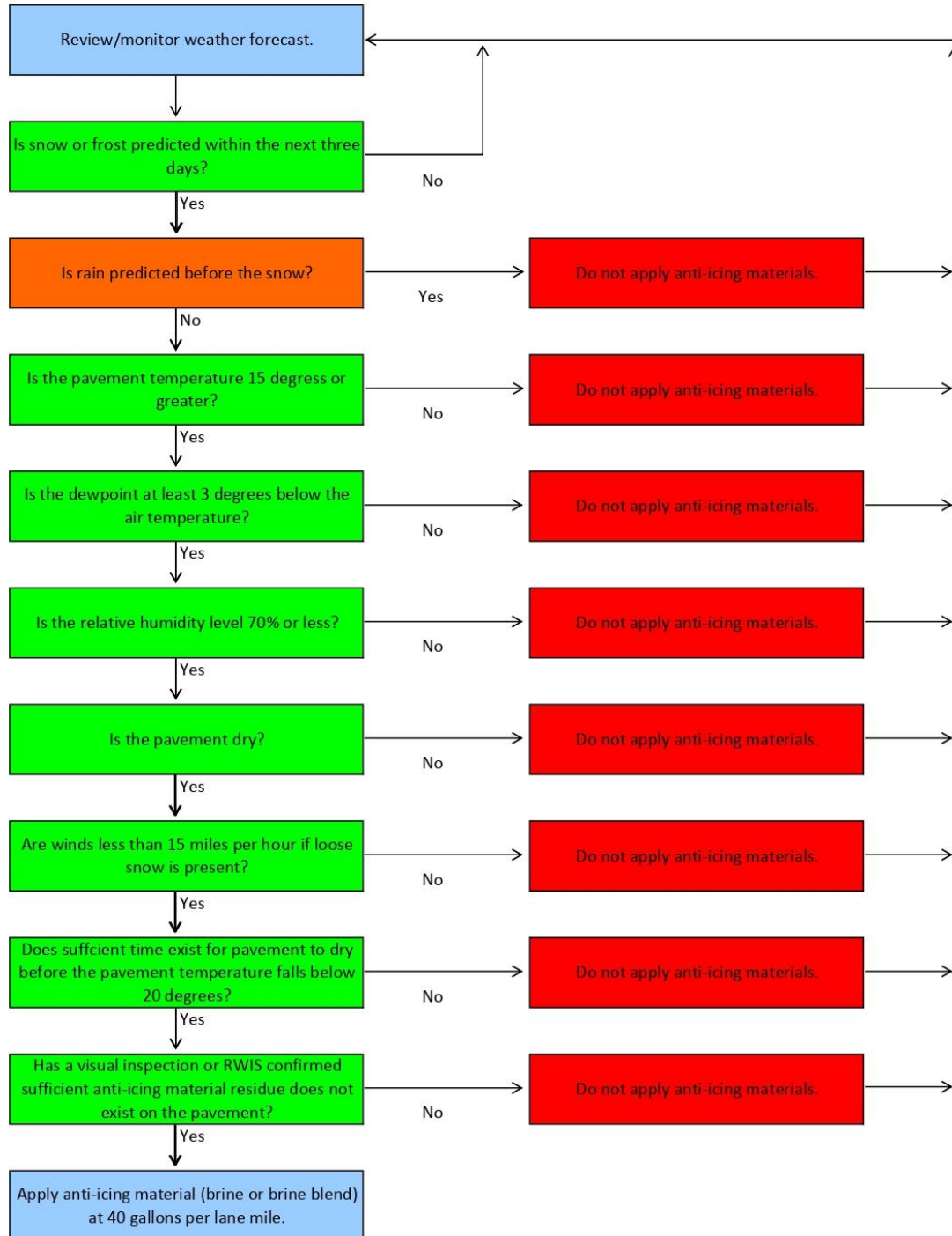


Between storms the snow plows should be fully fueled and maintained. All equipment should be kept indoors; if possible, otherwise they should be plugged in when nighttime temperatures are expected to be below 35°F. Equipment should be inspected daily before using, after each shift, and at least every 3 days if they aren't being used. The Streets Superintendent will make sure there is always an adequate supply of sand and ice melt.

The Streets Superintendent will, at his discretion, direct crews to apply brine/geo-brine solution to the streets to prepare for an expected storm if the conditions are appropriate. The following flow chart is used to determine if the application of brine solution is warranted.

Snow and Ice Control Plan

Anti-Icing Application Decision Flowchart



Snow and Ice Control Plan

Sanding and Plowing

A variety of materials may be used for ice control such as conventional anti-skid mixture, liquid anti-icer and granular anti-icer. (See the description of these materials later in this Plan.) The required materials and application rates are determined by the Street Superintendent based on current and future weather conditions in accordance with supplier recommendations, environmental guidelines and acceptable municipal practices.

The Street Superintendent will implement methods and procedures to monitor weather conditions in order to begin operations as soon as possible after accumulation begins and snow can be effectively plowed. Plow(s) will be dispatched immediately when snow starts and in some cases, will pre-treat areas with anti-icer.

Streets shall be plowed and/or anti-iced in accordance with the street plowing priority policy as defined in the Plan. Level 2 streets may be plowed with Level 1 streets when route plowing efficiency can be achieved. All snow will be moved from the center of the road to the curb unless directed otherwise by the Street Superintendent. Typically, snow should only be plowed to the middle if it is going to be picked up and hauled off.

Level 1 and Level 2 streets with multiple lanes will be plowed such that snow is removed from all travel lanes during the storm and from turn lanes after the snowfall has ended. This may require pushing snow near public sidewalks. Operators shall make every effort to prevent snow from being plowed onto walkways.

Streets with two lanes will be plowed as wide as possible without pushing snow on the public sidewalks. One plow pass in each direction will be made on Level 3 streets in order to keep snow from being pushed into the parking area or onto sidewalks.

Snow removal

In the case of a category III or IV storm, the Public Works Director or Streets Superintendent will declare a Snow Alert by notifying city management, the police department, customer service, City Facebook page, City Website, and all media outlets in Sheridan.

A map of these routes can be found in the appendix. Typically, the road graders will start putting the snow in windrows down the middle of the road at 12:00 am. The snow blower will then begin picking up snow at 2:00 am with the assistance of privately contracted trucks and city dump trucks.



Snow and Ice Control Plan

Snow routes are typically picked up in two nights. Depending on the amount of snowfall and the interval between consecutive storms, it may take longer or the street department may wait to pick up snow until the storm slows down.

Snow will be hauled to dedicated snow storage sites. Drivers will make every effort to minimize the resulting noise from dumping snow. Drivers will also track their hours, miles traveled and the number of loads they hauled. Privately contracted trucks must be pre-approved by the Streets Supervisor and are required to provide proof of insurance before they are allowed to haul snow. It is important to note that the snow storage sites are for City use only. Private contractors may not utilize the sites for dumping.

Splattering

After a storm does not produce any more snow and temperatures are warm enough, crews will begin to plow snow from the gutters into the vehicle wheel paths. This splattering technique is helpful because the cars will break up chunks of snow and accelerate melting. If snow is left stacked in the gutter it likely will not melt between storms and could clog catch basins as it melts and refreezes at night. Splattering will be performed on Level 1, 2 and 3 streets.

Snow and Ice control Procedures- Parks

The Park Superintendent will monitor the forecast and schedule the parks crew to start at 6:00 a.m. the following day if a snowstorm is expected. Subcontractors will be dispatched to clear pathways based on need. The Public Works Director will approve the use of snow removal contracts if their services are warranted.

Materials

Granular Anti-icing

During normal ice control operations, a granular anti-icing material is spread on the street to prevent physical bonding of the ice and snow to the street surface. The numerous and changing anti-icing solids that are commercially available will be evaluated prior to each winter season by the Public Works Department and purchased based on performance and cost. Anti-icing materials will be kept out of the weather and monitored closely throughout the season to make sure there is not a shortage.

Snow and Ice Control Plan

Typical de-icing solids used by Wyoming cities include:

Rock salt - 100% sodium chloride (NaCl), mined natural white salt Application temperature to 20 degrees F.

Ice Slicer® - mined natural salt from Redmond, Utah. It is reddish in color, 93.5% sodium chloride and 6.5% minerals. It is 50% more expensive and 6.5% less corrosive than white rock salt.

Ice Kicker®- a coarse graded solar salt crystallized from brines from the Great Salt Lake in Utah. IceKicker has been pretreated with a proprietary liquid enhancer. It is blue in color.

Anti-skid material – (Salt/Aggregate Mixture) Salt mixed with sand at 100lbs of salt to each ton of sand. The added salt is mostly for anti-caking, not for anti-icing. This material may be effective in certain temperature or street conditions.



Brine/Geo-Brine

Prior to snow plowing operations, brine (solution of 23.3% salt) or Geo-Brine (70%-80% brine, 20%-30% GeoMelt, a product of sugar beet refining) may be applied to the street and bridge pavement to prevent bonding of packed snow and ice to the pavement. It should only be used as a pre-treatment under certain circumstances. Rain and/or low temperatures will negate the effects of brine. Brine may also be mixed with various agricultural/food production byproducts (ie: sugar beet waste stream) to lower the freezing point and to inhibit crystallization of ice.

Equipment

The City's standard snow removal equipment is shown in the table below. Most snow removal equipment can be tracked in real time using Automatic Vehicle Location/Global Positioning System. The data collected during each storm will be reviewed daily to verify plow trucks are being effective and following established routes.

Snow and Ice Control Plan

Unit #	Year	Make	Description	Use
2-31	2008	Chevrolet	1 Ton Flatbed with plow & sander	Sand, plow
3-28	2019	Freightliner	5-yard dump truck w/ plow & sander	Sand, plow
3-29	2016	Freightliner	5-yard dump truck w/ plow & sander	Sand, plow
3-33	2016	Freightliner	5-yard dump truck w/ plow & sander	Sand, plow
3-36	2002	Volvo	Tandem dump truck*	Haul snow
3-37	2017	Volvo	Tandem dump truck	Haul snow
ST301	2019	Freightliner	5-yard truck w/ plow & sander	Sand, plow
3-45	2008	Freightliner	5-yard dump truck w/ brine tank*	Brine
ST304	2016	Western Star	5-yard dump truck w/ plow & sander	Sand, plow
SL433	2020	Case	221 Loader	Clear parking lots
4-36	2014	Volvo	L90H loader	Load snow, plow, blower
4-35	2015	Caterpillar	930k loader	Stack snow, plow
4-39	2014	Caterpillar	140M2 Grader	Windrow for blower
4-40	2019	Caterpillar	140M3 Grader	Windrow for blower
4-58	2014	Larue	Snow Blower	Pickup snow
4-59	2008	Fair	Snow Blower	Pickup snow
SL434	2021	Case	521 loader	Load anti-ice material

*Typically used as shown, but can be outfitted with an additional plow if necessary

STORM SUMMARY REPORT

When any storm event has ended, the Street Department shall prepare a written summary of the snow and ice control operation that will contain:

- Starting and ending time of operations
- Number of miles plowed
- Amount of material used
- Loads of snow hauled
- Brief analysis of problems encountered and recommendations
- Estimated snow depth



COMMUNICATIONS PLAN

Statement of Objectives

It is the objective of the City to communicate important, up-to-date information about snow and ice control operations to Sheridan citizens, school district officials, health care facilities, utilities, and local businesses.

Internal Communications

During any severe weather incident, information from briefings and updates will be disseminated by the Public Works Director or Streets Superintendent to all internal audiences. People to be contacted include city management, police dispatch, and customer service.

External Communications

- The Sheridan Police Department may use Reverse 911 for extreme emergencies.
- The Public Works Director or designee will be proactive with local media to convey information to the public.
- The City encourages citizens residing on snow routes to monitor the City of Sheridan Facebook page and City website. Citizens not residing on snow routes should also check these sites to monitor snow and ice maintenance operations.
- Customer Service will record all customer concerns and notify the appropriate division when required.

Sidewalks, Driveways, Parking and Private Plowing

Sidewalks

The City maintains the public sidewalks located adjacent to city property. Sidewalks located adjacent to private property are the responsibility of the property owner.

In the interest of public safety, the City strongly requires (Ordinances 23-4 and 23-5) residents and business owners to remove snow from the sidewalks adjoining their property within 24 hours after a snowstorm ends. It is also important that the areas around school bus stops, fire hydrants, power boxes and storm drains be kept cleared and accessible. Citizens are not allowed to deposit snow from sidewalks or driveways into the street.

Although the City's snowplow operators attempt to keep snow from being plowed onto sidewalks it may occur and it is the resident's responsibility to clear the snow from the sidewalk. Supervisors and plow operators will be informed of incidents of plowing snow onto residential sidewalks when they are reported. Citizens can call Customer service at (307) 674-6483 or go to the City website to report an incident.

Snow and Ice Control Plan

Driveways

The resident, business owner or property owner is responsible for opening driveways that are plowed closed by City snowplows. Snow from plowing driveways or opening driveways shall not be plowed into the street. Placing snow in a public street is a violation that is subject to enforcement by the police department. (Ordinances 23-4 and 23-5)

Parking on Snow Routes

Removing snow on high priority routes cannot be accomplished if vehicles and trailers are parked in the way. The City marks snow routes with signage that states no parking is allowed when a snow alert is declared. The City's Facebook page and media outlets will also publish a snow alert. Parked or abandoned vehicles on these routes will be towed.

Use of Private Contractors

The City does not encourage the use of private contractors for snow removal on City streets. Private contractors that plow snow from City streets must obtain a permit. Individuals that use a private contractor for snow and ice control on publicly owned streets will not be reimbursed by the City for any snow and ice expenses incurred. The private contractor will be held responsible for damages to public infrastructure.

Private contractors that remove snow and ice from sidewalks or parking lots must obtain a permit, show proof of insurance, and acknowledge that they understand the restrictions on what equipment is allowed on sidewalks, as well as the fact that they will be responsible for any damage to public infrastructure (light poles, sign posts, electrical/control boxes). Due to the increasing amount of decorative light poles, electrical and control boxes in sidewalks, as well as safety concerns, the only self propelled equipment allowed on sidewalks are ATV's and small tractors. No pickup trucks or loaders are allowed on sidewalks.

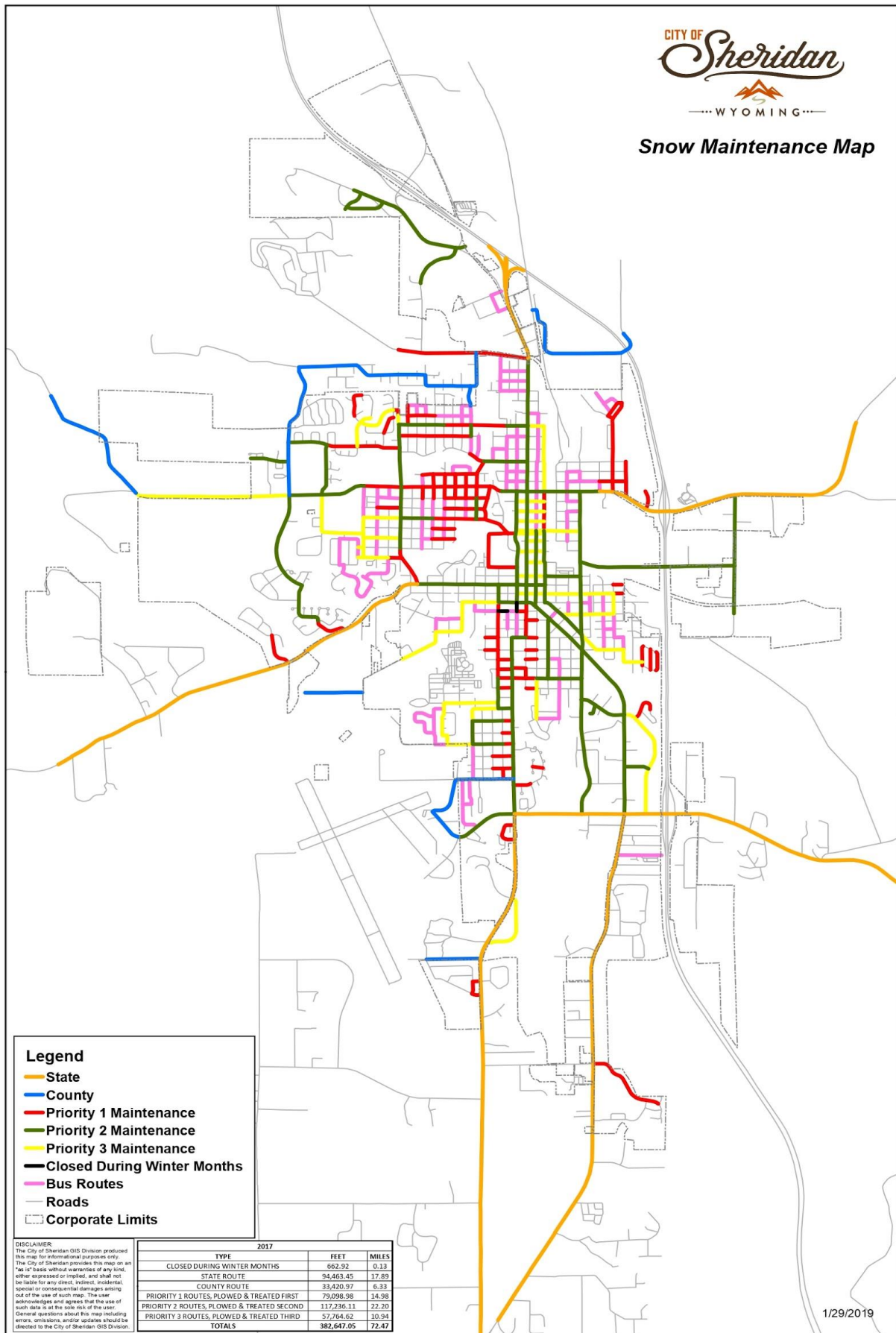
Private contractors shall not push or place snow from private property, parking lots, streets or driveways onto public streets or sidewalks. Placing snow in a public street is a violation that is subject to enforcement by the police department. (Ordinances 23-4 and 23-5)

Snow and Ice Control Plan

Appendix

	City Management	
	Public Works Director	(307) 675-4237
	Streets Superintendent	(307) 674-4112
	Street Supervisor	(307) 674-4112
	Park Superintendent	(307) 674-6483

Customer Service	(307) 674-6483
City Service Center	(307) 674-4112
Police Dispatch	(307) 672-2413



Snow and Ice Control Plan

