



Village of Downers Grove

2014-15 Snow & Ice Report

August 2015



2014-15 Snow & Ice Control Overview

EXECUTIVE SUMMARY

Snow and ice control is essential for safe and continuous vehicular and pedestrian movement throughout the community and is one of the most visible services provided by the Village of Downers Grove. The Village's goal (target service level) is to clear snow and ice from heavily traveled streets within 12 hours after the conclusion of a winter storm, and within 18 hours after the conclusion of the storm for lesser traveled streets. Snow and ice control also allows for emergency responders to perform their essential functions as safely and efficiently as possible during a winter storm event.

During the 2014/15 winter season, the Village achieved the target service level in 21 of 22 total snow and ice control events. The Village did not meet all parameters of the target level of service during the blizzard that occurred on January 31 through February 2, 2015. The target service level was met on the Priority 1 & 2 streets, and on 85% of the Priority 3 streets. The remaining 15% of the Priority 3 roads were completed within 20 hours of the end of the storm, missing the target by two hours.

During the past 11 years, the Village has achieved the target service level in approximately 97% of all events (an estimated 274 of 281 events).

Recommendations for Operational Improvements for 2015-16 and Beyond

- Continue to hire seasonal snow plow drivers and expand the number of drivers if possible.
- Formalize the relationship with other units of local government with respect to cooperatively working together to clear snow and ice during large events.
- Provide contractual hauling services for the downtown during large events.
- Expand service for sidewalk clearing at the Belmont Station.
- Review the target level of service for Priority 3 streets.

This report includes:

- An overview of the Village snow and ice control program.
- A review of the 2014/2015 winter season.
- Recommendations for operational improvements for 2015-16 and beyond.

OVERVIEW

The **Village's Snow Removal and Ice Control Policy** outlines the target level of service and the resources and methods that are used to achieve this result. The Village's roadway system includes 167 centerline miles of streets and 340 cul-de-sacs and dead-end street segments. Streets are prioritized under the following levels:

- **Priority 1** streets are primary roadways with the highest traffic volume (2,000 or more vehicles per day), roadways adjacent to schools, and roadways leading to Good Samaritan Hospital.
- **Priority 2** streets are all other secondary through-streets.
- **Priority 3** streets are cul-de-sacs and dead-ends.

Target Level of Service

The target level of service for each priority level is as follows:

Street Category	Target Condition	Target Response Time
Priority 1	Passable Bare pavement	During the storm Within 12 hours of storm's end
Priority 2	Bare pavement	Within 12 hours of storm's end
Priority 3	Passable	Within 18 hours of storm's end

Snow Routes

The Village-owned and maintained streets are divided into 10 snow routes ([see map](#)) for the purpose of allocating equipment and resources. In addition to the 10 snow routes, snow and ice control also occurs in the downtown for parking lots and sidewalks and for the three commuter stations, including parking lots, railway platforms and area sidewalks.

Snow Personnel

The Village has 36 employees who are snow plow drivers. The drivers are assigned to two 12-hour operating shifts (14 drivers per shift and four backup drivers). The drivers are assigned as follows:

- Ten front line drivers plowing the snow routes.
- Four drivers plowing Village-owned parking lots and assisting in snow routes as assigned by the snow managers.
- Four backup drivers can be called in to cover personnel vacancies and larger snow events.

Note: In addition to the 36 full-time snow plow drivers, the Village also uses seasonal drivers for larger events.

Village personnel are supplemented by contractual services for the following:

- Downtown sidewalks, commuter station platforms (with the exception of Belmont) and sidewalks adjacent to the commuter rail stations.
- The streets of certain townhome developments with private snow service contracts.

Snow Vehicles

The Village owns 12 5-Ton and 10-Ton trucks to plow all snow routes. The smaller vehicles (3-Ton, 1-Ton and 3/4-Ton) in the fleet are used to assist with snow plowing Priority 3 streets and plowing parking lots.

The snow manager assigns drivers to vehicles based on several variables: the type of storm, condition of the streets and parking lots, number of staff members working, traffic volumes, and the number of vehicles in Village-owned parking lots. The breakout of vehicles and equipment is listed below:

	Type of Vehicle	Number	Operations
	10-Ton Trucks	6	Plowing All Segments of Snow Routes
	5-Ton Trucks	6	Plowing All Segments of Snow Routes
	3-Ton Trucks <i>Able to plow up to 4" of snow</i>	2	Plowing Priority 3 Route Segments and Parking Lots
	1-Ton Trucks <i>Able to plow up to 4" of snow</i>	12	Plowing Priority 3 Route Segments and Parking Lots
	3/4-Ton Trucks <i>Able to plow up to 4" of snow</i>	1	Plowing Parking Lots
	Wheel Loaders	3	Hauling Snow from the Downtown Plowing Snow in Cul-De-Sacs in Large Events
	Skid Steers	2	Hauling Snow from the Downtown

Road Salt and Liquid Deicing Material

The Village has a new salt storage dome that was completed in 2014 at the Public Works Facility. The dome can hold approximately 6,700 tons of road salt. An additional 800-1,000 tons can be stored under a roof with tarps next to the Fleet Services Facility. Road salt is purchased through State of Illinois and DuPage County Joint Purchasing contracts. To increase the effectiveness of road salt, the Village uses liquid prewetting agents and has the capacity to store about 20,000 gallons of liquid agents. This liquid, when added to salt, improves the melting of snow and ice at temperatures below 20-degrees Fahrenheit.

Weather Forecasting

The Village maintains contracts with two professional weather forecasting services, Schneider Electric and Murray and Trettel.

Schneider Electric

The Village has used the Schneider Electric weather radar system for more than 17 years to monitor weather events. This service is an advanced web-based platform with an array of options that allows multiple users in various locations to access weather conditions and alerts, as well as expanded forecasts and graphs of what to expect from approaching storms.

Murray and Trettel, Inc.

Murray and Trettel has provided snow and ice warnings for the Public Works Department since 2001. Their service uses professional meteorologists to actively monitor and dispatch our snow supervisors in advance of winter weather events that may impact the Village. By using Murray and Trettel, Public Works can minimize costs through the following capabilities:

- Pre-Storm Notification Services – alerts on-duty snow supervisors in advance by fax, e-mail and wake-up calls if impending weather conditions warrant. Allowing the Village to optimize crew, salt, and equipment deployment.
- Specific Forecasts For Downers Grove – targets the Village so staff gains greater insight for storm resource planning.
- Unlimited 24/7 Consultation with Professional Meteorologists – allows on-duty snow supervisors to talk live to a professional meteorologist, providing up to the minute snow and ice details. This avoids second-guessing old radar data, listening to a pre-recorded message, or reading an out-dated forecast.

REVIEW OF THE 2014/2015 WINTER SEASON

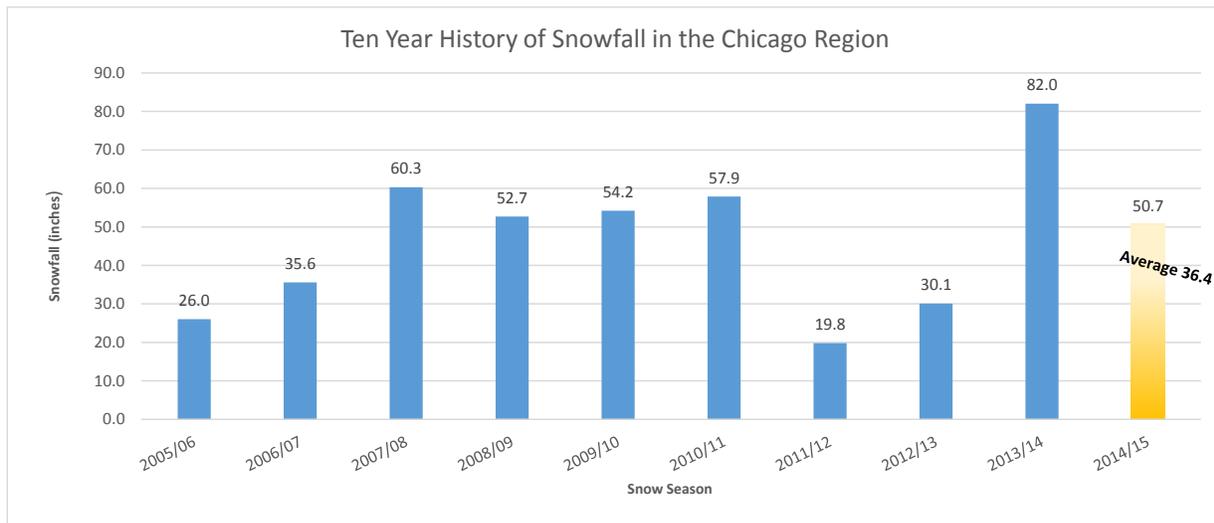
This review of the 2014/2015 winter season will include a summary of:

- The weather conditions experienced.
- The Village's snow and ice control response.
- Recommendations for future improvements.

Weather Conditions

The total snowfall measured at Chicago O'Hare for the 2014/2015 winter season was 50.7 inches. While this was a significant decrease from the 2013/2014 season where snowfall totals were over 80 inches, the 2014/2015 season total was 140% of the seasonal average of 36.4 inches. The 2014/2015 season also had 16 days of below-zero degree temperatures. February 2015 registered as the second coldest February on record.

This graph shows the past 10 years of total annual snowfall:

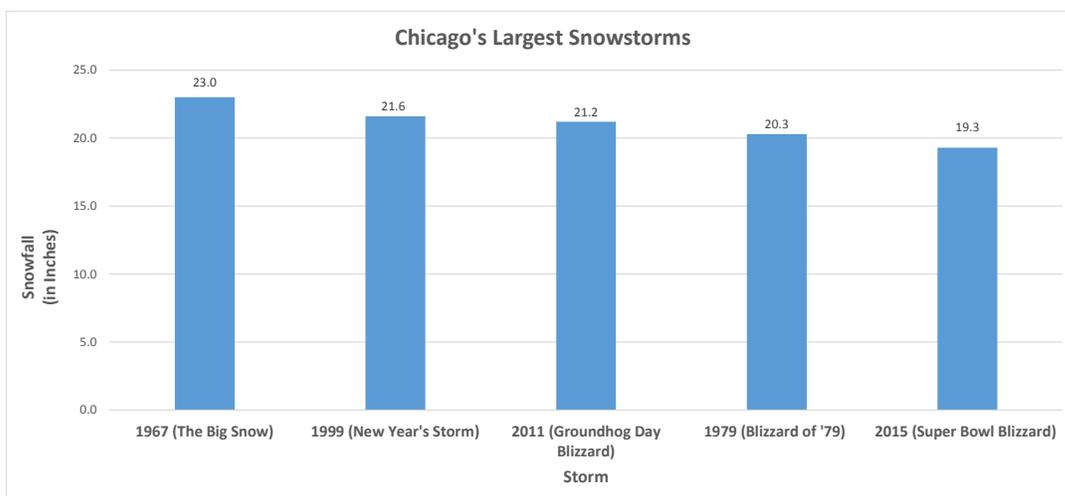


The total 50.7 inches of snow for the 2014/2015 season included 22 snow or ice events of the following magnitudes:

Snow events less than 2"	11
Snow events 2" to 4"	5
Snow events 4" to 6"	1
Snow events over 6"	1
Freezing Rain	4
Total Events	22

In February 2015 the region experienced a record-setting blizzard. The "Super Bowl Sunday Blizzard" laid down over 19 inches of snow and was the 5th-largest storm to ever hit the region. This storm lasted multiple days, beginning on January 31 and ending on February 2.

Below is a graph depicting the region's largest snowstorms on record:



If the blizzard is removed from the 22 total events, the snow season becomes a more typical annual total seasonal snowfall of 31.7 inches.

Summary of the Village's 2014/2015 Snow and Ice Control Response

In 2013/2014, the Village implemented several changes designed to improve responses to snow and ice control events. The improvements including the reconfiguration of snow routes, the addition of larger vehicles, an increase in road salt supply, and the addition of back-up snow plow drivers were found to be very effective in meeting the Village's target level of service for all events in 2014/2015 with the exception of the blizzard event.

Snow Route Reconfiguration - The reconfiguration of snow routes reduced the total time to complete a pass-through of all 10 routes. This change balanced the time it took to complete each route, and reduced the time spent going to and from routes.

Additional Equipment - The addition of equipment to the snow and ice operation increased the number of vehicles that are capable of plowing snow four inches or greater in depth. A 5-ton truck that was previously not used in the snow operation was replaced and outfitted with a plow, and an existing wheel loader was outfitted with a plow. These two vehicles were added to the operation without increasing the total vehicle count in the Village's fleet. Large, front-line trucks were available in each route for all events, and a third loader was available for clearing snow from parking lots and Priority 3 streets.

Increased Road Salt Supply - An increased amount of road salt from the construction of the 6,700 ton salt storage dome. The larger size allowed the Village to purchase and receive a full season's supply of salt prior to the start of the winter season. A second supplier was also added for reliability. Road salt was available at the Public Works facility for use during all snow and ice control events. Of the 7,040 tons of salt purchased, the Village used 6,032 tons. Without the large blizzard event, Village staff estimates 5,508 tons of salt would have been used.

Back-up Drivers - Supplementing with back-up drivers, seasonal snow drivers and other units of local government to increase the overall number of snow plow drivers. Back-up drivers were utilized in snow events with over 2 inches of accumulation. Two seasonal snow plow drivers assisted staff during the blizzard. Six semi dump-trucks were secured to provide hauling services for the downtown clean-up during the blizzard. The Downers Grove Park District assisted in the clearing of school crosswalks during the blizzard.

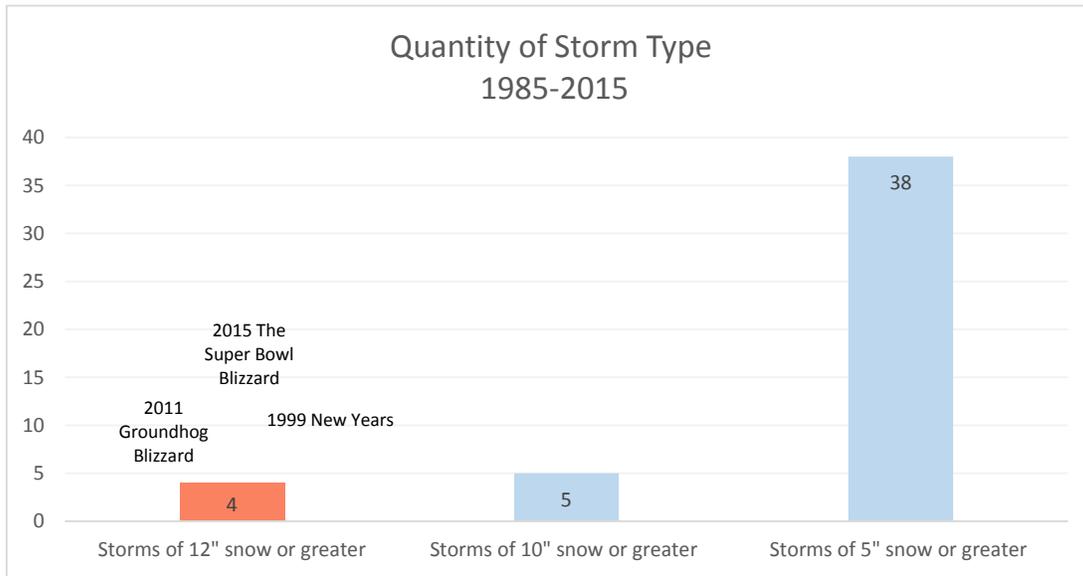
Blizzard Response

The Village did not meet all parameters of the target level of service for the blizzard. The target service level was met on the Priority 1 & 2 streets, and on 85% of the Priority 3 streets. The remaining 15% of the Priority 3 roads were completed within 20 hours of the end of the storm, missing the target by two hours.

While the storm response came very close to meeting the target level of service, the Village received a significant number of calls from residents on Priority 3 streets. Due to the extreme rate of snow accumulation, the Village was not able to use the smaller vehicles it typically assigns to Priority 3 streets.

Clearing Priority 3 routes was delayed as all of the large trucks and loaders were assigned to clear snow on the Priority 1 and 2 streets.

Large snow events like the blizzard experienced this past snow season are not common. The graph below depicts the frequency of large snow events experienced in the Chicago region over the last 30 years. In fact, three of the five largest snowstorms ever recorded (1999, 2011, 2015) fall into that first category shown by the red bar.



Operational Improvements for 2015-16 and Beyond

Continue to hire seasonal snow plow drivers and expand the number of drivers if possible.

During the 2014/2015 snow season the Village employed three, seasonal part-time snow plow drivers. During the February blizzard two of the seasonal workers were available and participated in the event. This additional resource was instrumental in helping to achieve the response targets. In addition to the seasonal workers from last season, staff is seeking potential, additional seasonal workers to assist with larger events.

Formalize the relationship with other units of local government with respect to cooperatively working together to clear snow and ice during large events.

The Downers Grove Park District assisted the Village by clearing designated school crossings after the February blizzard. This assistance enabled Village crews to continue with clearing streets and snow hauling activities. Park District staff expressed a need for assistance with snow clearing during large events, as their snow plows are not large enough to push as much snow as the Village's larger trucks. Discussions are ongoing, and a meeting is being scheduled with various units of local governments to discuss potential partnerships during larger events.

Provide contractual services for hauling snow from the downtown during large events.

During the February blizzard the decision was made to use private companies for truck hauling services to assist with snow removal from the downtown and commuter parking lots. This contractual work allowed Village employees to focus their efforts on completing Village streets and parking lots. To accomplish this contractual work quotes were solicited and emergency purchasing authority was used to secure the services. This was very cost effective, and as a result hourly hauling rates were included in the new downtown snow and ice clearing contract to be used as directed by staff.

Expand service for sidewalk clearing at the Belmont Commuter Station.

The Village currently clears snow and ice from the train platforms and pedestrian walks near the Belmont Avenue train station. The services are performed by a private company under contract with the Village. Sidewalks along Belmont Avenue were not included in the contract for snow and ice clearing. The Village received complaints from residents about difficulty accessing the train station along the Belmont Avenue sidewalks. Additional sidewalks were added to the snow and ice clearing contract in the Belmont station area.

Review the target level of service for Priority 3 streets.

As a result of the February blizzard a significant number of complaints were received from residents who live on cul-de-sac and dead end streets (Priority 3 streets). The target service level for these streets is that they will be passable, and bare pavement if possible, 18 hours after the end of storm. The vast majority of storms leave less than 4” of snow and during these events most residents can get in and out of their homes prior to the Village completing its work. For events that have more than 4” of snow the Village generally will make one pass into the street, opening it up for limited access until it can be completely cleared. For events the size of the February blizzard, residents experienced long periods of time without a way to leave their homes. As a result, Council directed staff to explore options for providing additional services to the Priority 3 streets and staff prepared a scope of work and contract documents. This contract was advertised for bid, one bid has been received and will be presented during the budget process for consideration, along with a review of the other service modifications considered and their associated costs.