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Title: Approve the transition of the annual bulk curbside leaf collection program to a four-week, two-cycle program beginning in fall 2019

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4/16/2019	1	City Council	denied	Pass

CITY COUNCIL AGENDA ITEM

ACTION REQUESTED:

Approve the transition of the annual bulk curbside leaf collection program to a four-week, two-cycle program beginning in fall 2019

DEPARTMENT: Department of Public Works

SUBMITTED BY: John Rutkowski, Deputy Director

BOARD/COMMISSION REVIEW:

N/A

BACKGROUND:

Naperville's thriving urban forest provides a lush, diverse canopy of greenery enjoyed by residents and visitors alike during the warm weather months. However, as cooler weather begins, the logistics of disposing of a significant amount of falling leaves in a large community comes to the forefront.

To aid residents with leaf disposal, the City provides two leaf collection options: a free bagged leaf program from the end of October through mid-December, and the popular six-week bulk curbside leaf collection, which provides residents in Naperville with three opportunities each season to rake their leaves curbside for pickup and disposal by DPW. The bulk collection program is intended to augment, not replace, the bagged program and enhance leaf removal options for the community.

The bulk program begins six weeks prior to Thanksgiving and ends after the third and final pickup is complete, or when winter weather prevents DPW from picking up leaves. The timing and end date of the bulk leaf collection program is critical as DPW must have enough time to convert the equipment

used in leaf collection over to winter operations prior to the first snowfall.

The annual bulk curbside leaf program has been in existence for over 25 years, with DPW annually collecting approximately 40,000 to 50,000 cubic yards of leaves during the six-week program. When Naperville was a smaller, less developed community with less mature trees, it was a very viable program. However, as Naperville has grown and its urban forest has matured, the program has become more difficult to administer and effectively complete.

Current Program Considerations

Numerous considerations impact execution of this service; including equipment, winter preparations and weather conditions. Below is a summary of the considerations that impact this program and how recent challenges with each are impacting overall service delivery:

Equipment

DPW utilizes the following equipment to administer the program:

- 22 dump trucks
- 6 John Deere tractors
- 4 front end loaders
- 5 leaf loaders
- 5 suction units
- 1 vacuum unit
- 3 contractors (one for leaf pick-up and the other two for leaf disposal)

It is estimated that DPW drives approximately 12,500 miles during the six-week program. Naperville's leaf equipment continues to age; the vacuum unit is 9 years old, the five suction units are 11 years old and the five leaf loaders are 22 years old. Nearly 80% of leaves are collected via leaf loaders, which require follow-up street sweeping to remove debris. The suction units are the least efficient and can only be used in certain areas of the City with minimal leaf fall. The vacuum unit is more reliable than the suction units, but requires additional dedicated crew members and trucks to operate.

Although the leaf loaders were refurbished five years ago, with each year it becomes more challenging and costly to repair the leaf equipment, as replacement parts are rare or extinct since bulk leaf pick-up is not a common service offered by municipalities in this region. In addition to the wear and tear on the leaf equipment, the dump trucks, which are primarily used for winter operations during the 20-week winter program, are heavily utilized for transporting leaves.

Winter Preparation

Winter operations is a core service for DPW; untreated roads become a hazard for residents, employees of businesses, public safety departments and medical transport vehicles. All 22 of the City's dump trucks are used for winter operations; as noted above, these same trucks are utilized for bulk leaf collection. Leaf collection and winter operations require different equipment; it takes approximately one week to properly convert the trucks for winter following leaf collection. Winter preparation includes:

- Removing leaf boxes so salt can be stored in the bed of the truck;
- Installing plow blades and chloride tanks;
- Calibrating the equipment sensors for salt/chloride distribution;
- Servicing the trucks for winter operations through our Fleet mechanics; and

- Driving the 22 districts, or 1,500 lane miles, by our operators to re-evaluate their routes for hazards.

DPW has not been able to perform this prep process in advance of winter weather the past four years due to winter weather occurring in late November or the first week of December while the bulk curbside leaf program is still underway. This late preparation, which is then expedited through the use of overtime, not only limits DPW's ability to effectively address ice- and snow-filled roadways at the onset of winter, but also puts the equipment and operators at risk and costs the City additional money.

Weather

The variability of weather prior to the beginning of the program each year, which determines when leaves fall from trees, and the near certainty that winter weather will occur prior to the end of the program each year makes bulk leaf collection challenging to predict and often impossible to effectively complete.

Leaves fall from trees depending upon the type of weather experienced during the preceding spring and summer. Heat, moisture, drought, cold, cloud cover and sunlight all determine when leaves fall. With the multitude of factors impacting leaf loss, no consistent pattern exists from year-to-year. DPW frequently receives complaints that the City starts the program too soon in the season; in most years, it begins in early October. DPW currently disposes nearly half of the leaves collected onto local farm fields. As it gets further into October and November, rain and snow make it challenging, and sometimes impossible, to get into the fields with our trucks.

Winter regularly strikes during the end of November as average temperatures are low enough for any type of moisture to result in freezing rain, ice, and/or accumulating snow. Winter weather often prevents DPW from completing the third and final cycle on time, if at all, since the equipment struggles to pick up wet, snow covered and frozen leaves. It takes two weeks to complete a cycle throughout the entire City, so it is impossible to compress the third cycle of the program if winter weather threatens to strike.

2018 Bulk Curbside Leaf Program

The 2018 bulk program was an example of challenges with all three program considerations - equipment, winter preparations and weather - coming to the forefront.

DPW received multiple complaints via the Police Department on two occasions in November 2018 regarding dangerous road conditions. In both instances, DPW was unable to effectively salt City streets because the equipment was not set up for snow operations.

In addition, the Naperville area experienced a significant accumulating snowfall the Sunday following Thanksgiving prior to the completion of the third and final cycle of the bulk program. Because DPW's traditional leaf equipment had been converted for winter operations and could no longer pick up the leaves that remained curbside or that were pushed up into the parkway because of snow plowing, DPW enlisted the help of Groot and its garbage trucks to complete leaf pickup. The program was completed in mid-December at an additional cost of almost \$50,000 for the work.

Based on the overwhelming feedback received, DPW determined that residents were largely unhappy that the City provides no certainty as to when the bulk program ends. Many residents

stated that if they had known in advance that no additional pick-ups were going to occur because of the accumulating snowfall, they would have found other means to dispose of their leaves, whether through use of the free bagged program, mulching, composting or hiring a landscaper to take them away.

DISCUSSION:

Proposed Program Revision

Due to the aforementioned challenges surrounding aging equipment, unpredictability of weather and the public safety need for adequate winter preparation, along with the extreme challenges and significant feedback experienced in the fall of 2018, DPW has examined how this service can more effectively be administered and delivered in the future. Using comparisons from surrounding communities and historical program data, DPW is proposing the six-week bulk curbside leaf collection program be reduced to a four-week program that starts on the Monday of the fourth full week of October and ends in mid-November.

Through this four-week program, residents would receive two bulk curbside pickups as opposed to three. The option of using the free bagged leaf disposal program provided by the City's waste hauler after the bulk program ends would remain. As proposed, the revised program will still provide great assistance to the residents who dispose of leaves through the bulk program, but also optimize equipment usage and provide more certainty for when the program ends.

Surrounding Communities Comparison

Staff reviewed the City's proposed leaf disposal program as compared to those offered in surrounding communities and found the following:

- Curbside pick-up programs are **not** offered in Joliet, Aurora, Schaumburg, Orland Park, St. Charles, Downers Grove, Elmhurst, Lombard and Hinsdale. In these communities, leaves are collected through bags and/or waste wheeler carts.
 - Where a bagged program is provided, only Downers Grove requires a sticker on these bags; all other communities are free.
 - Orland Park previously provided bulk leaf pickup to their five largest subdivisions; however, the community eliminated this program in 2017 because it was more cost effective to use Waste Management.
- Of those communities offering curbside pickup (see below), Naperville is the only community of significant square mileage that offers curbside pickup services on a *citywide* basis. In two of the three smaller communities that offer curbside pickup citywide, there are no supplemental bag/waste wheeler cart pick-ups offered.

City/Village	Square Miles	Bulk Curbside Pickup	Bulk Curbside Cycles/Weeks	Bulk Curbside End Date	Bags/Waste Wheeler Carts	Stickers	Bags/Waste Wheeler Cart End Date
Naperville, IL (Existing)	39	Yes	3 cycles, 6 weeks	Thanksgiving	Yes, 6 weeks	No	Mid December

Naper ville, IL (Propo sed)	39	Yes	2 cycles, 4 weeks	Week prior to Thanksgiving	Yes, 6 weeks	No	Mid December
Elgin, IL	37	Yes, specific to downtown area only	1 cycle, 1 week	First week in November	Yes, 9 Weeks	No	November 30
Lisle, IL	7	Yes	5 cycles, 5 weeks	Week prior to Thanksgiving	Yes, starts beginning of fall	Yes	First week of December
LaGra nge, IL	3	Yes	8 weeks	Thanksgiving	No	N/A	N/A
LaGra nge Park, IL	2	Yes	2 cycles, 6 weeks	Thanksgiving (may extend weather permitting)	No	N/A	N/A

Historical Program Data

Historically, the bulk collection program has always begun on the Monday of the third full week of October. The revised approach of beginning the program on the Monday of the fourth full week of October and ending in mid-November will eliminate the first pickup week in October and the final pickup week in November.

The proposed program ensures that crews run the equipment and pick up leaves when more leaves will have fallen, reduces overall stress on aging equipment and avoids collection at the end of November when winter weather is more likely to occur.

Despite starting one week later and ending one week sooner, DPW will still be able to pick up the majority - up to 90% - of leaves each year. Since 2010, DPW has picked up 80% of all leaves during weeks two through five of the six-week program (Figure 1). Weeks two through five roughly correspond to the last two weeks in October and first two weeks in November.

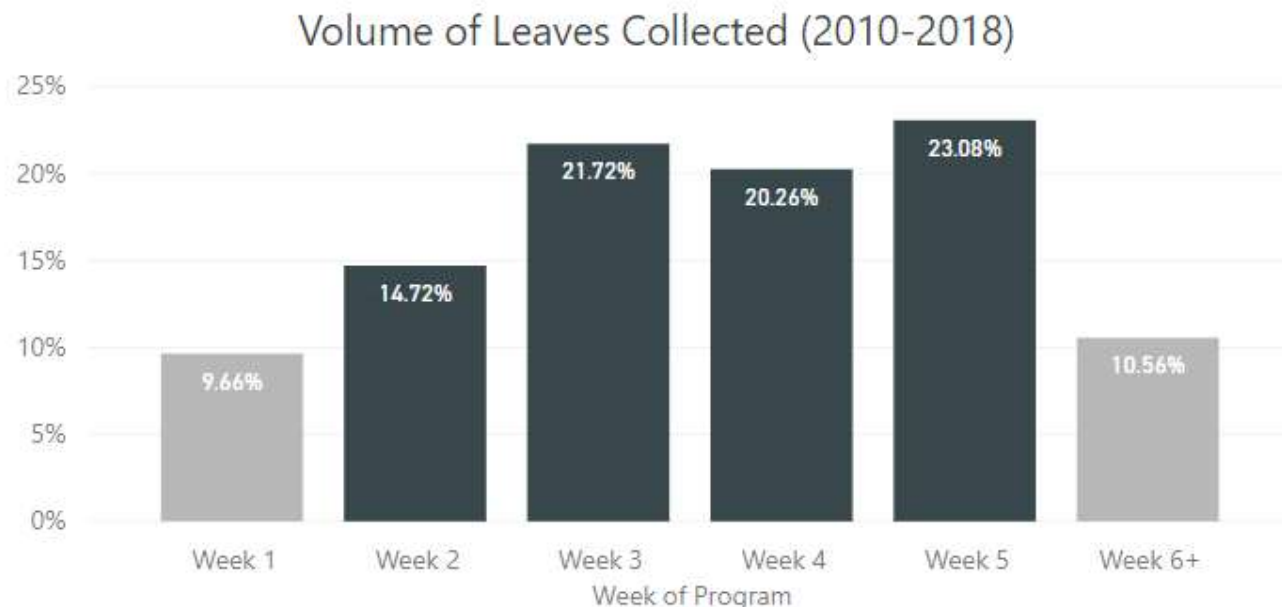


Figure 1. The darker bars represent the weeks of the proposed four-week cycle.

Since 2006, DPW has never had to respond to a winter event in the first three weeks of the program; however, data shows weather has an increasing likelihood of disrupting the program during its final three weeks. The likelihood of a winter event occurring in week four of the program is 23%; that likelihood grows to 54% by week six (Figure 2). By ending the program in week five, the chance of a winter event interrupting or terminating the leaf collection program is significantly reduced. Ending in week five also allows DPW to fully prepare its equipment for winter and sets clear, consistent expectations for residents that after the second cycle ends in mid-November, as proposed, the curbside program is over and the free bagged program should be used to dispose of their remaining leaves.

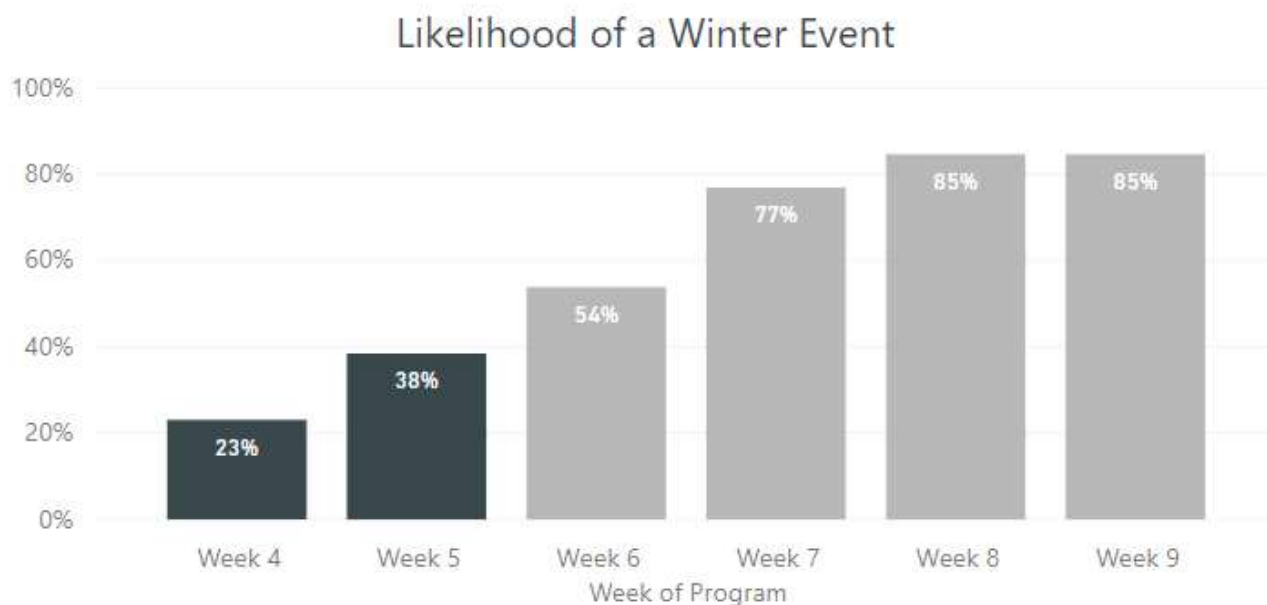


Figure 2. The darker bars represent the weeks of the proposed 4-week cycle at risk to a winter

event.

Continuous Improvement

As part of the City's overall commitment to continuous improvement in service delivery, DPW has been piloting new processes throughout the past few years to ensure a bulk collection program for this size community can exist moving forward. While the proposed revision to the program addresses timing, winter preparations and community expectations, these efforts are looking at equipment issues and leaf disposal constraints.

Traditionally, DPW has disposed of leaves collected through the bulk program via local farm fields. As these fields continue to become scarce, DPW piloted a new program in 2018 that utilized contractors to compost a good portion of leaves City crews collected. Rather than having trucks go into local farm fields, which has been challenging due to weather and the delay in farmers removing their crops, the crews put the leaves on a hard surface at DPW's facility. The contractors picked up the leaves with their semi-trucks and took them back to their facility for composting. This action prevented weather delays and ultimately made the operation more efficient since crews could continuously pick up leaves in the field. DPW will expand this program in 2019 so that nearly 100% of what is picked up by City crews will be sent out for composting.

DPW has also piloted other equipment for picking up leaves. DPW used a clam shell bucket in 2018 with some success and will forgo replacing one of its suction units, which is broken beyond repair, by using rented front end loaders and semis in 2019. DPW is also working with Elgin Sweeper and others to determine if there is a true replacement to our leaf loaders within the next five years. Although the leaf loaders should last for five years, they are no longer manufactured and parts are difficult to find.

DPW has also identified a trackless loader which it will demo in the future; however, the equipment is several hundreds of thousands of dollars to purchase. In the end, DPW finds that front end loaders and trucks seem to be the most efficient, particularly when the leaves are wet, frozen, and decomposing; however, there is a significant cost to renting this equipment.

Summary and Additional Benefits

As Naperville has grown, the 25-year-old annual bulk curbside leaf collection program has become more difficult to administer and effectively complete annually due to older, antiquated equipment; prohibitively expensive and limited newer equipment options; weather variabilities; the need for proper winter preparations; disposal limitations; and community expectations around a consistent program end-date.

To address these ongoing challenges, DPW proposes that the six-week bulk curbside leaf collection program be reduced in length to a four-week program that starts on the Monday of the fourth full week of October, ends in mid-November, and provides for two bulk pickups citywide annually. This change will accomplish the following:

- Continue to pick up nearly 90% of the leaves that were collected as part of the six-week program during the most optimal weather conditions;
- Reduce existing equipment stress by only operating equipment when leaves are historically on the ground and in good condition to be picked up by the equipment;
- Reduce cost in overtime, leaf disposal and cartage annually;

- Approximately \$5,000 in overtime
 - Approximately \$30,000 in disposal costs
 - Approximately \$10,000 in cartage costs
- Allow City crews to continue with tree trimming through mid-October and finish other street and storm water maintenance before fall;
- Enable DPW to effectively prepare for winter operations;
- Provide certainty to our residents regarding the end date of the bulk program;
- Continue the free bagged leaf program; and
- Further promote both the environmental benefits of composting and mulching leaves as well as the environmental detriment of leaves entering local waterways via the storm sewer system.

FISCAL IMPACT:

Annual savings of approximately \$45,000.