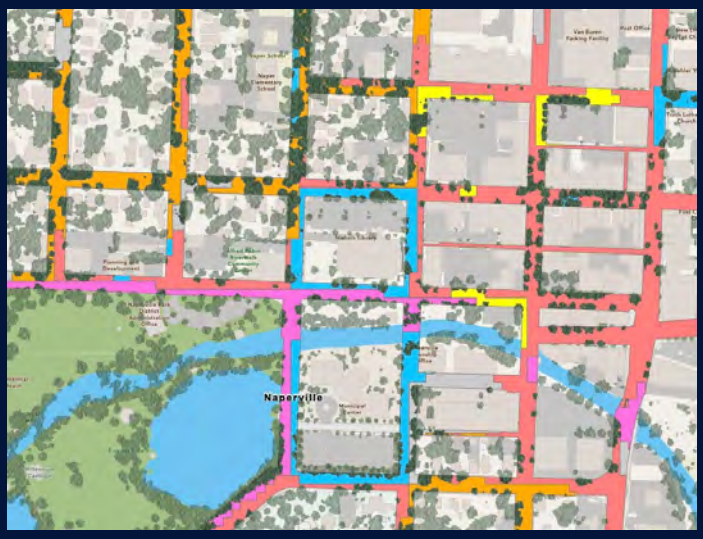

Photo Courtesy of Glendale Heights

Non-Point Source Phosphorus Reduction Feasibility Analysis

December 2021

BAXTER & WOODMAN Consulting Engineers

LOWER DUPAGE RIVER WATERSHED COALITION

DuPage River Salt Creek Workgroup

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I. Acknowledgements

The Non-Point Source (NPS) Phosphorus Reduction Feasibility Study was funded by members of the DuPage River Salt Creek Workgroup (DRSCW) and Lower DuPage River Watershed Coalition (LDRWC) through monies collected as part of the Special Condition of the National Pollutant Discharge Elimination System (NPDES) wastewater treatment permits. Contributing staff members from The Conservation Foundation (TCF) were Stephen McCracken, Deanna Doohaluk, Alex Handel, and Jennifer Hammer, as well as intern Erin Rhodes. The development of this report would not have been possible without the significant contributions of Baxter & Woodman Consulting Engineers, notably Dan Bounds, Eileen M. Kennedy, and Tom Krohn.

The DRSCW and LDWRC wishes to recognize and thank all of our project partners. DuPage County Stormwater Management (DC SWM) assisted with the distribution of the questionnaire to DuPage County communities. V3 Companies, Ltd. provided GIS services to support the development of the canopy cover layer utilized in the analysis. We also thank the members of the DRSCW Projects Committee for their input on all phases of the project from the development of the questionnaire to the review of the final report.

II. Executive Summary

Permit holders in the Salt Creek and DuPage River Basins, as part of their Illinois NPDES permit, evaluated the impact of area street sweeping and leaf litter management practices on non-point source loadings of total phosphorous (TP) pollution and developed recommendations on how those programs might be made more effective in regards to TP removal.

Leaf litter and street sweeping were selected for evaluation over structural BMPs for a number of reasons. These "source reduction" practices are already ubiquitous in the watersheds as they are already included in municipal budgets and are understood by local public agencies. Structural BMPs, while required on most new and redevelopment projects per local and state regulations are appearing only slowly in the already developed landscape of DuPage, Cook and Will Counties. Further, source reduction practices do not compete for the limited space in the urban environment. Structural BMPs also require ongoing maintenance to continue to remove nutrients and can even switch from sinks to sources over time, perhaps most critically during the important spring period.

Source reduction practices also target TP in urban stormwater more precisely. Intensive monitoring of urban stormwater wash off from residential areas suggest that nearly 60% of the annual warm weather TP loading (59% of which was in the dissolved fraction) occurs in the fall and comes from leaf litter biomass. Research shows that leaf litter management can reduce TP loadings in fall stormwater runoff by over 60%.

To better understand and quantify current conditions in the targeted watersheds, the study developed a high resolution map of "effective canopy cover". This is the tree canopy that overhangs the road system and has been shown as being the major predictive factor of TP loading from impervious surfaces. To collect data for this study, a questionnaire was sent to communities, townships and agencies who operate a transportation network, which had a 58% reply rate representing approximately 77% of the total study area. Data from the questionnaire was used to populate a modified version of the Minnesota Pollution Control Agency (MPCA) Street Sweeping Tool, calibrated to better reflect the TPS capture rates using a curb mile input. The model calculated that from the 77 % of the watershed coved by the questionnaire, street sweeping captured 6,870 and 12,021 lbs TP/year at the 25th and 50th percentile respectively. The frequency of sweeping, timing of sweeping (spring and fall) and the nature of the road drainage system (curb and gutter or swale) all played roles in the magnitude of TP removal at individual agencies.

Although all questionnaire responders have a sweeping program and most vary sweeping frequency seasonally, there are opportunities to increase the efficiency of TP removal using source reduction practices. Most notably, a number of agencies do not increase the frequency of their sweepings in fall and spring, and areas with a high effective canopy cover may also benefit from increase sweeping frequency.

Any additional investments aimed at reducing loading from non-point sources would need to be weighed against the marginal costs of TP removal at Publicly Owned Treatment Plants. The findings and recommendations in this study report will be included in the Nutrient Implementation Plan (NIP) planned for December 2023.

1. Introduction

As part of the NPDES Permit Special Conditions and in support of nutrient water quality assessment and reduction efforts, the DuPage River Salt Creek Workgroup (DRSCW) and Lower DuPage Watershed Coalition (LDRWC) have performed an analysis of the current performance of street sweeping and leaf litter management practices and their impacts on phosphorous source reduction. This analysis includes the identification of opportunities for future reductions of total phosphorus (TP) in stormwater runoff. Table 1 was extracted from the 2016 DRSCW Special Conditions and contains the specifics for this study.

Table 1. *Extracted from 2016 DRSCW Special Conditions.*

Project Name	Completion Date	Short Term Objectives	Long Term Objectives
NPS Phosphorus Feasibility Analysis	December 31, 2021	Assess NPS performance reductions from leaf litter and street sweeping	Reduce NPS contributions to lowest practical levels

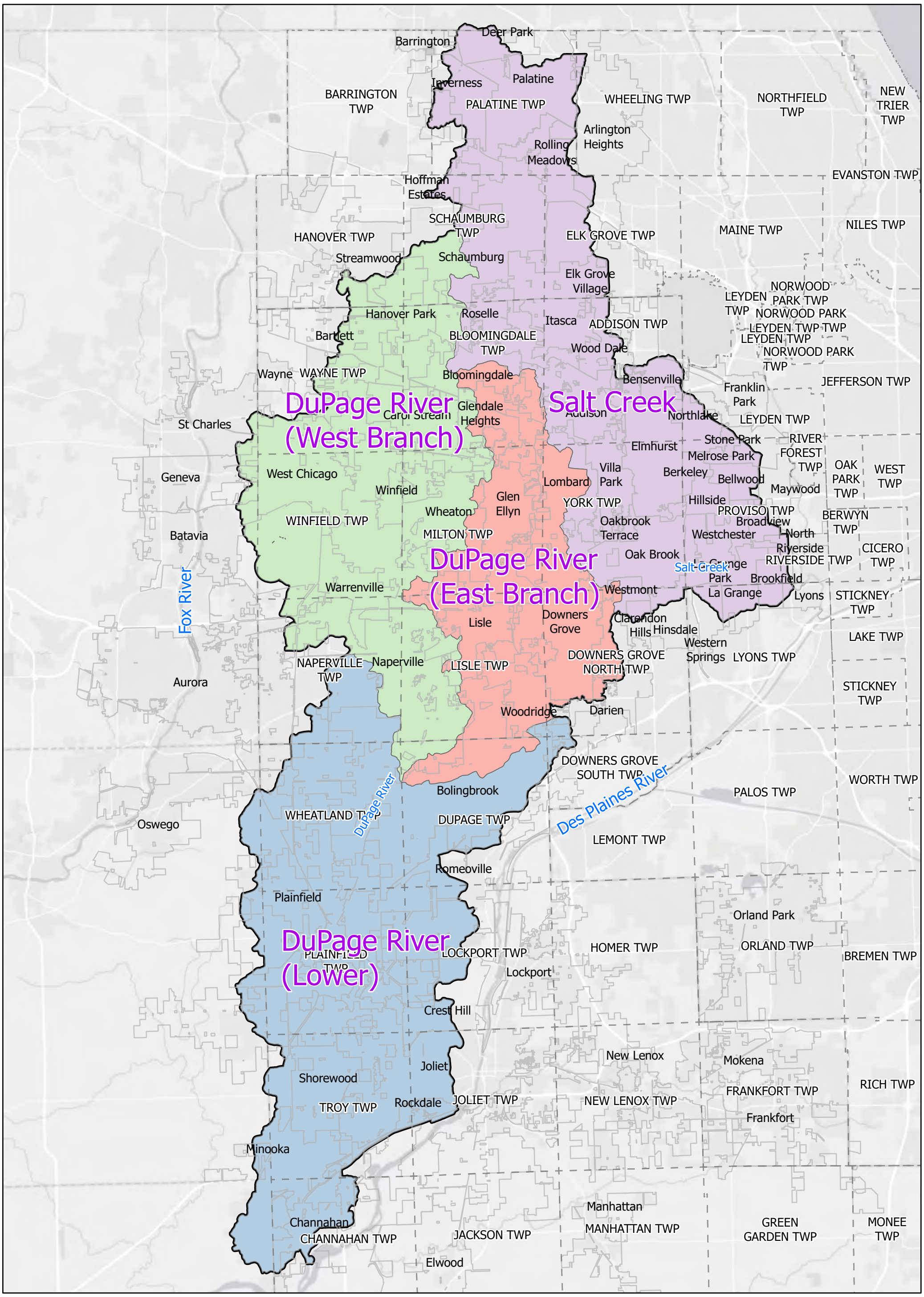
While street sweeping and leaf litter collection both commonly occur in the DRSCW and LDRWC area, this analysis was aimed at estimating the magnitude of current TP reductions and identifying areas where sweeping and leaf litter collection practices could be implemented or enhanced to increase stormwater TP reduction. The analysis area includes the three river basins of the DuPage River – East Branch, West Branch, and main stem (Lower DuPage), as well as the Salt Creek basin, with a total area of approximately 530 square miles. This area contains approximately 104 communities, townships, and agencies with authority over a public roadway network which may have a leaf litter and/or street sweeping program. Map 1 shows the DRSCW and LDRWC Watersheds and their municipal units.

This report summarizes the data that was collected and analyzed, the analysis tools and approaches used, an estimate of current TP reductions from street sweeping and leaf litter collection practices, opportunities for improved TP reductions, and additional data collection or study efforts that could further inform non-point source nutrient reduction efforts in the DRSCW and LDRWC watersheds.

PROJECT OVERVIEW

MAP 1: DRSCW AND LDRWC WATERSHEDS MAP

DUPAGE RIVER SALT CREEK WORKGROUP



2. Background to Study

Phosphorus can enter surface water from several sources - organic matter (leaves, flowers, pollen, lawn clippings), animal feces, lawn fertilizers, atmospheric deposition of dusts, and erosion of soils (Berretta & Sansalone, 2011; Waller, 1977). Although it exists in several naturally occurring compounds, it is often measured in terms of total phosphorus, TP. While TP is naturally present, above certain concentrations it can act as a nutrient that triggers algal growth leading to cascading negative effects on surface water quality (Bothwell, 1988; Biggs, 1995; Rosemond, 1993; Hill & Dimick, 2002; Bushong & Bachmann, 1989; Van Nieuwenhuyse & Jones, 1996).

In urban systems, impervious surfaces like roads can fast-track TP into storm sewer systems that lead directly to surface water with little to no capture. Communities, townships, and agencies that manage public road systems often engage in some level of street sweeping either by hand, or using mechanical broom, regenerative air or vacuum filter machines. Such practices are carried out to improve aesthetics, remove potential driving and braking hazards, and keep storm sewer grates free from debris (interviews with local agencies). While performing these functions, street sweeping also captures pollutants from the road surface that would otherwise get into surface water.

Studies have shown that street sweeping programs are most effective at capturing particles greater than 125 µm and are less effective for finer particles (<62 µm) (German & Svensson, 2002) (German and Svensson 2002). This is significant for pollution reduction because concentrations of many pollutants are highest in finer material. Sartor and Boyd (1972) who were among the first to survey street sweepings, collected debris from 12 urban communities in the United States. They documented that while most of the debris collected was made up of harmless inorganic material like silt and sand, and that pollutants were most highly concentrated in fine sediments (<43 µm). Particles <43 µm constituted only 5.9% of the total mass nevertheless contained over half of the samples' mass of heavy metals, three quarters of the pesticides, and one-third to one-half of the "algal nutrients" (including phosphates, a component of TP). Sartor and Boyd concluded that since street sweepers removed only 15% of these ultra-fine particles, street sweeping could not be useful as a pollution reduction strategy. A more recent study conducted in Prior Lake, MN, however, highlighted the potential for nutrient reduction potential by removing coarse particles. Street sweepings were collected over a two-year period then sorted by size and components. They confirmed that while much of swept material was inorganic, and that significant TP loading came from fine particles, coarse organic material that made up only 15% of the total mass contributed 36% of the sample's TP (Kalinosky, 2015).

The Prior Lake study was also able to identify temporal variation in TP wash off. By splitting up their TP loads by month and particle size, they were able to show that TP from fine particles peaked between February and April, which they contributed to finely crushed organic matter, soil, and

pollen deposited after spring snow melts (Figure 1). Meanwhile, TP from coarse organic material (i.e., leaf litter), peaked at even higher masses than fine loads during October and November (Figure 2). The study identified tree canopy cover as a predictor of recoverable TP regardless of the particle size. Since street sweepers are most effective at removing these large particles, they concluded that street sweeping regimes should target coarse organic material in the fall and post snow melt in the spring in areas with high percentages of tree canopy cover.

***Figure 1**. TP recovered in the fine fraction by month and year, all routes (Kalinosky, 2015).*

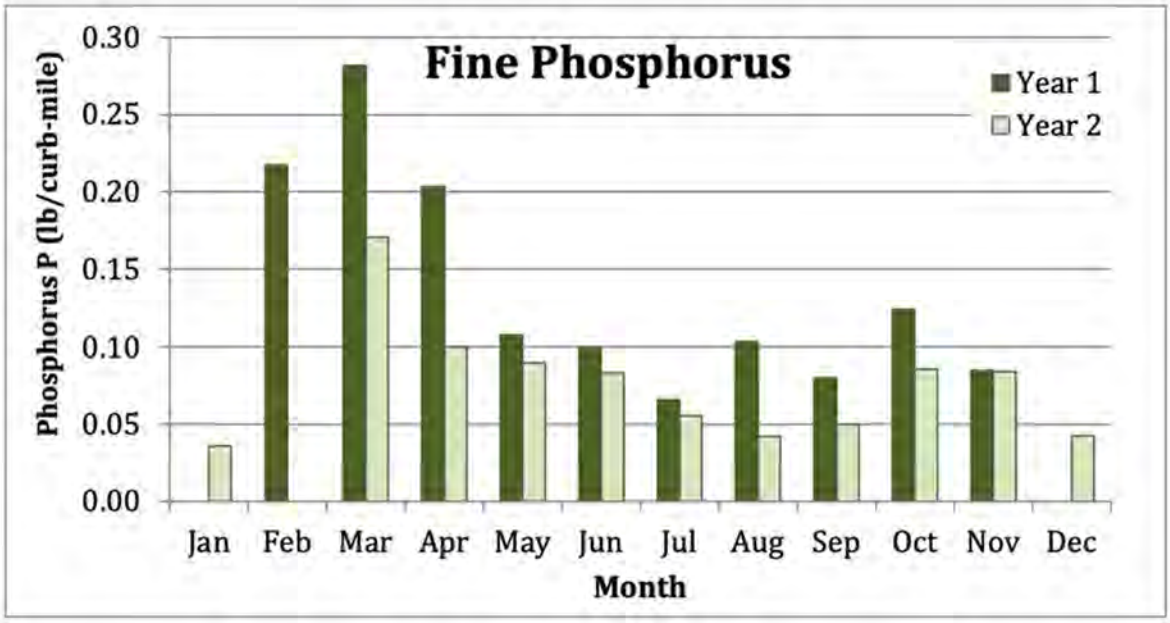
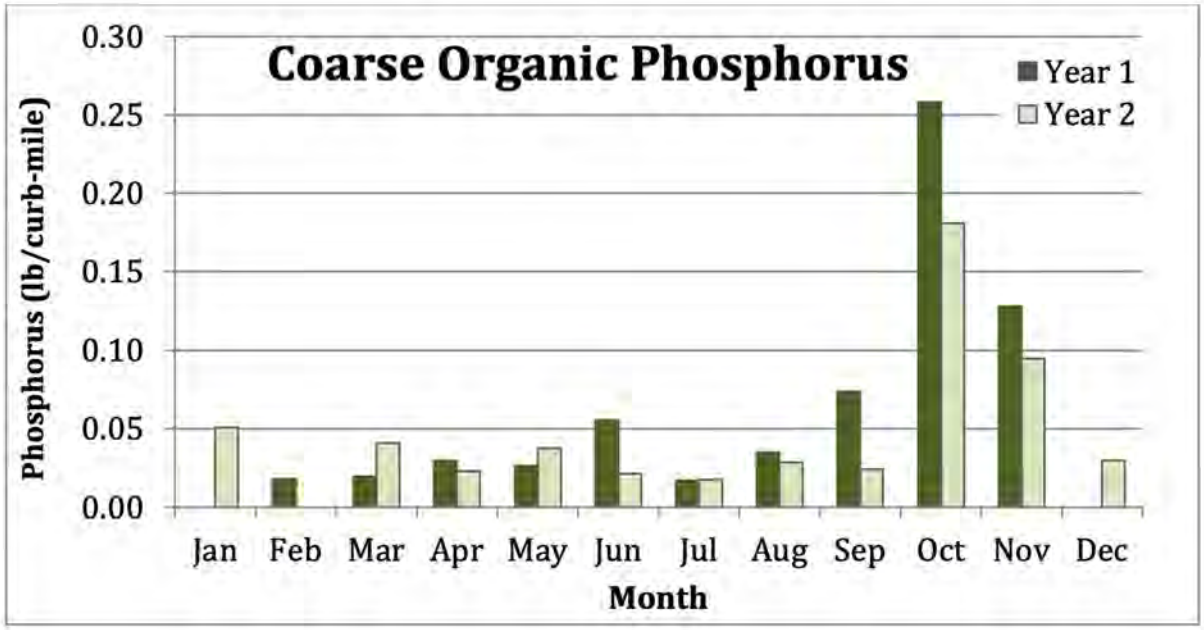


Figure 2. TP recovered in the coarse fraction by month and year, all routes (Kalinosky, 2015).



Leaves from trees that make up coarse and fine organic matter on roads are rich in easily leachable TP. A study performed in Madison, WI determined that 54 µg of TP per gram of oak leaves and 140 µg of TP per gram of poplar leaves can be leached into water (Cowen & Lee, 1973). When leaves were cut up, they were shown to leach almost three times more TP than intact leaves. Leaching can occur quickly as well: another study found that maple leaves soaked in water lost up to 80% of their TP within 48 hours (Wang, Thompson, & Selbig, 2020). Furthermore Selbig (2016) found that 59% of the TP leaching from leaf litter biomass was in the dissolved fraction. Dissolved phosphorus is the most bioavailable form of TP.

While it's been made clear that leaves and collected street sweepings contain TP with the potential to affect surface water, studies have also supplied firm evidence that leaf management and street sweeping can affect stormwater TP concentrations. Selbig (2016) suggested that as much as 60% of annual TP in urban runoff comes from fall leaf litter (Figures 3 and 4). Stormwater TP concentrations were monitored within two comparable catchments ("test" and "control") in Madison, WI for two years (2013-2014 and 2014-2015). In 2013-2014 (the calibration phase) both the test basin and the control basin had no leaf collection or street sweeping. During the second year (2014-2015, the treatment phase), the control basin still had no leaf collection or street sweeping. The test basin had weekly street sweeping in April through September. In October and November, the test basin was subjected to weekly leaf collection, with street sweeping, and USGS personnel took steps to remove all organic detritus from the drainage area prior to a precipitation event. The study notes "While this extra measure of leaf removal exceeds the capabilities of most municipal leaf collection programs, it sets a benchmark for the greatest potential reduction of

nutrients in runoff through removal of leaves and other organic detritus from urban streets with high overhead tree canopy" (Selbig W. , 2016). Mean October concentrations of total and dissolved phosphorus in the test catchment during the treatment phase decreased by approximately 80% compared to the calibration phase (no management).

In 2020, Selbig performed another street sweeping study aimed at determining the best methods for nutrient removal through realistic applications of leaf collection and street sweeping. Nine catchments in three Wisconsin cities were observed. Catchment areas that were cleaned (leaf collection followed by street sweeping) on a weekly basis had a TP load reduction of 65-71% (Selbig, Buer, Bannerman, & Gaebler, 2020) compared to the control. Catchments where streets were swept every two weeks had approximately 21% more TP in their stormwater compared to those with weekly sweeping. Meanwhile, where only leaf collection occurred, there was no significant reduction of phosphorus. Because leaves can leach TP quickly, the study concluded that the method of leaf collection and street sweeping was less significant than the frequency of sweeping. More frequent sweeping or leaf pickup meant that leaves did not have as much of a chance to steep in stormwater.

The placement of structural stormwater practices may help remove leaves and coarse particulates from stormwater flows but cannot capture the dissolved fraction of nutrients that makes up the majority of TP in leaf litter affected stormwater. While structural practices can allow stormwater to settle out sediments and plants to absorb phosphorus, decaying plant matter can become another source of leachable phosphorous (Cowen & Lee, 1973; Wang, Thompson, & Selbig, 2020). Such structural practices also compete for limited space in the urban landscape and both construction and retro fitting are expensive. In contrast, street sweeping and leaf collection do not have a spatial footprint, are already ubiquitous and part of budgets. Better understanding of the reductions created by these source reduction practices and what the options are for further optimization is a potentially *low cost plan* that can be adopted by all units of government that manage roadways.

Figure 3. *Mean Total Phosphorus in Stormwater at Control and Test Basins during Calibration (2013-2014).*

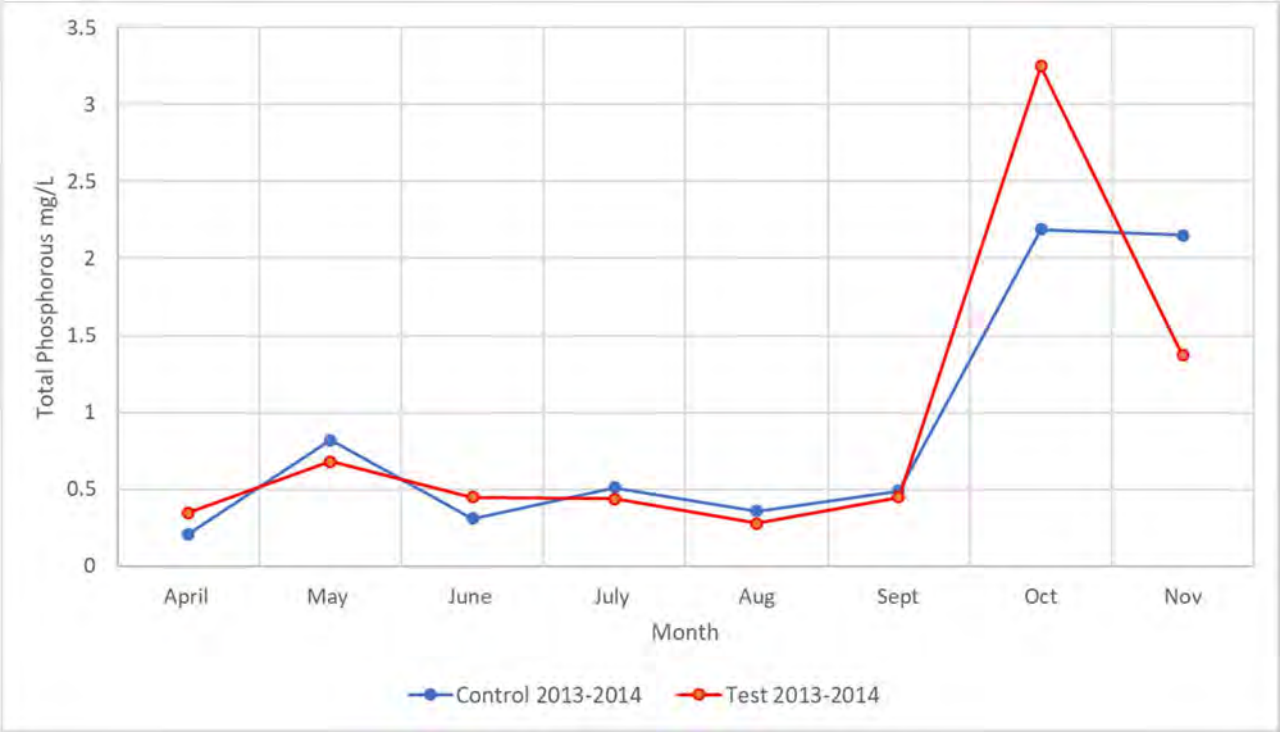
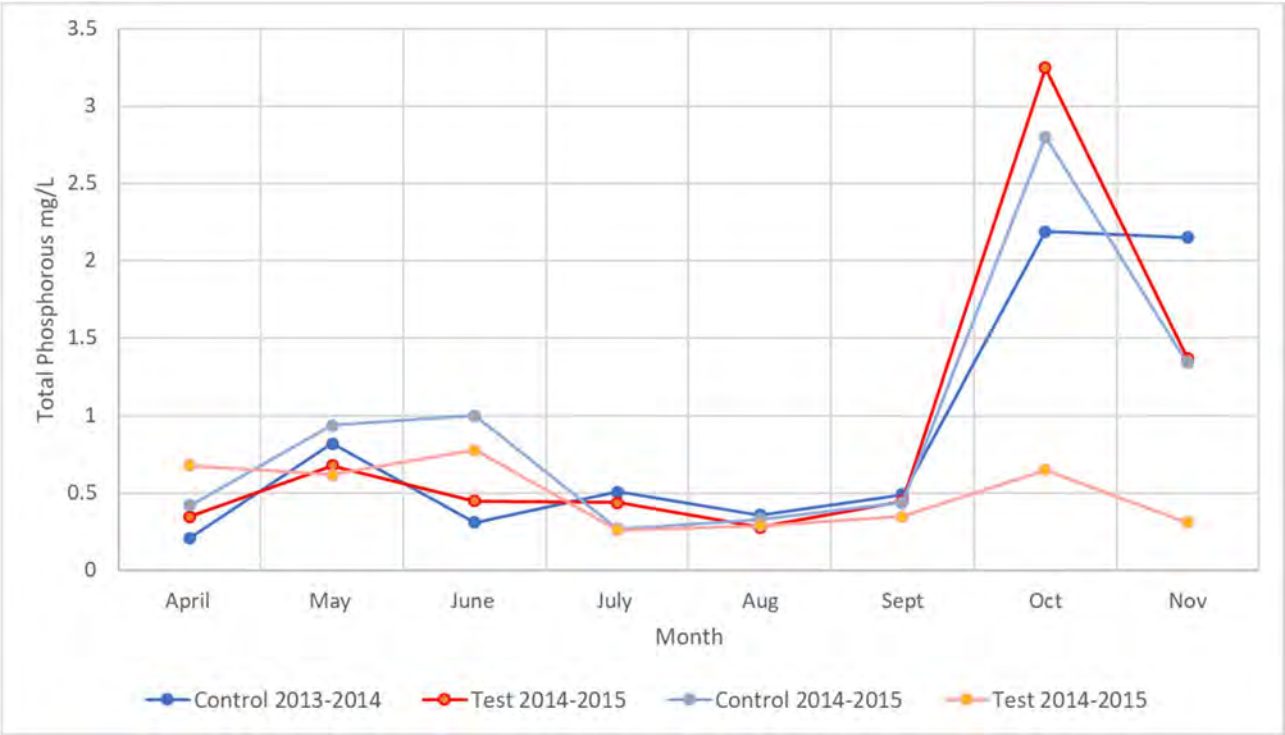


Figure 4. *Mean Total Phosphorous in Stormwater at Control and Test Basins during Calibration (2013-2014) and Test (2014-2015).*

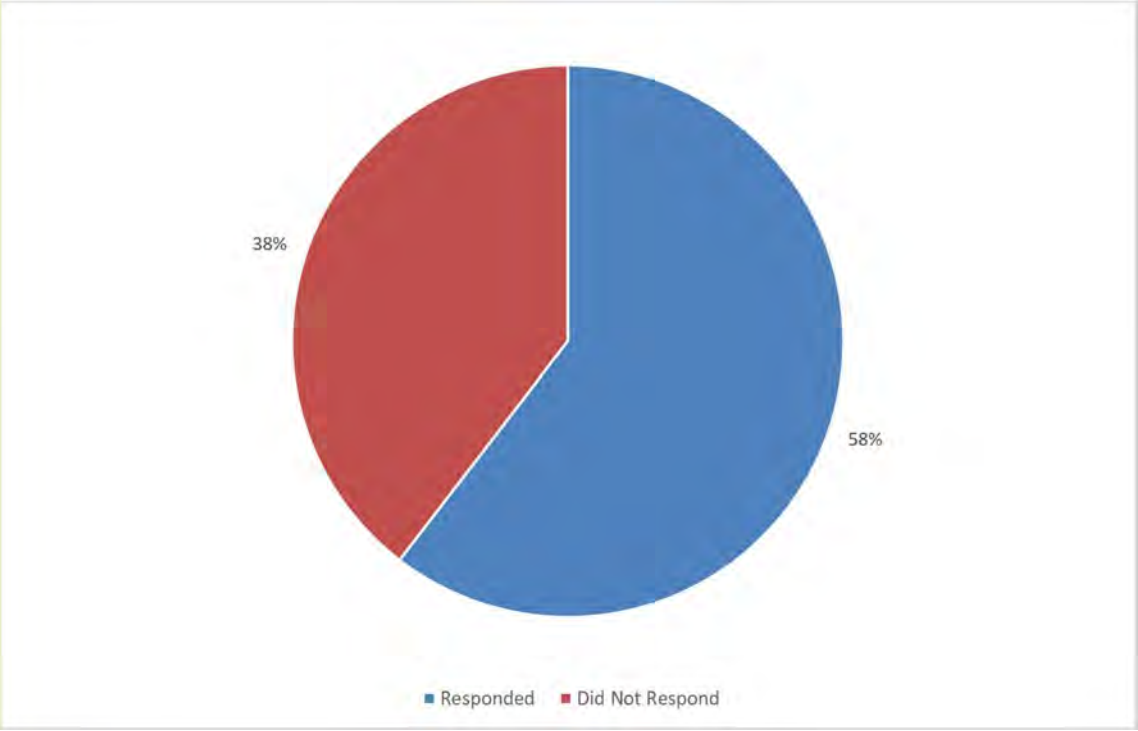


3. Survey of Local Street Sweeping and Leaf Litter Collection Practices

Street sweeping and leaf litter collection programs prevent TP from entering the storm drain system and local waterways (removed from the system). In 2021, a questionnaire was developed by the DRSCW's Projects Committee and members of the LDRWC to solicit information on the street sweeping and leaf litter practices that are currently performed in each community. A copy of the questionnaire can be found in Appendix A. It was based on a similar questionnaire, the Wisconsin MS4 Leaf Management Survey, developed for use in Wisconsin (provided by William Selbig USGS).

The questionnaire was sent out in mid-April 2021 to 75 DRSCW and LDWRC communities, 16 townships, and 4 agencies (95 total) that are responsible for street sweeping and/or leaf litter collection as shown in Map 1. A total of 48 communities, 6 Townships, and 1 agency provided a response to the questionnaire (Figure 5). The responding communities, townships, and agencies represent approximately 77% of the total watershed area. A summary of the questionnaire responses can be found in Appendix B. Appendix C contains the list of communities, townships, and agencies that received the questionnaire and if a response was/was not provided.

Figure 5. *Community, Township, and Agency Questionnaire Responses.*



3.1 Street Sweeping Practices

Plate 1. *LRS Clean Sweep, Photo courtesy of Woodridge Public Works.*

The Streep Sweeping portion of the questionnaire asked if a community, township and agency has a street sweeping program, who performs the street sweeping (unit of government or contractor), and what type of street sweeper is used during the street sweeping (Plate 1). Respondents also provided how many centerline miles the street sweeping program covers and what percentage of the centerline miles were curb and gutter. The frequency of sweeping was also reported by month and land type (i.e., residential, arterial, and commercial) and it was noted if the community increases sweeping in the fall. The disposal method of street sweeping debris was also asked.

Of the responses received, 47 communities, 3 townships, and 1 agency have a street sweeping program in place. Table 2 summaries the information obtained on local street sweeping practices through the questionnaire.

Table 2. *Summary of Street Sweeping Information Collected.*

Community	Centerline Miles Swept	Percentage of centerline miles that are curb/gutter	Sweeper Type	Increased Sweeping in Fall
Addison	96	75%	Mechanical brush with vacuum assist	Yes
Barrington	50	66%	Mechanical brush with vacuum assist	Yes
Bartlett	140	100%	Regenerative air with mechanical brush sweeper/Mechanical brush sweeper	Yes
Bensenville	59	100%	Mechanical brush sweeper/Mechanical brush with vacuum assist	Yes
Berkeley	22	100%	Regenerative air with mechanical brush sweeper	Yes
Bloomingdale	125	75%	Mechanical brush with vacuum assist	Yes
Bolingbrook	305	100%	Mechanical brush sweeper	Yes

Community	Centerline Miles Swept	Percentage of centerline miles that are curb/gutter	Sweeper Type	Increased Sweeping in Fall
Brookfield	57	100%	Mechanical brush with vacuum assist	No
Carol Stream	112	100%	Regenerative air with mechanical brush sweeper	Yes
Channahon	83	66%	Mechanical brush sweeper	No
Crest Hill	39	100%	Mechanical brush sweeper	No
Downers Grove	120	66%	Regenerative air with mechanical brush sweeper	Yes
Downers Grove Township	35	50%	Mechanical brush sweeper	No
Elk Grove Village	128	100%	Mechanical brush sweeper	Yes
Elmhurst	115	100%	Mechanical brush with vacuum assist	Yes
Elwood	30	75%	Mechanical brush with vacuum assist	No
Frankfort	100	100%	Regenerative air with mechanical brush sweeper	No
Glen Ellyn	83	100%	Mechanical brush sweeper	Yes
Glendale Heights	72	100%	Regenerative air with mechanical brush sweeper	Yes
Hanover Park	100	100%	Mechanical brush sweeper	Yes
Hoffman Estates	160	75%	Regenerative air with mechanical brush sweeper	No
Illinois DOT	2700	33%	Mechanical brush sweeper	No
Itasca	43	75%	Mechanical brush sweeper	Yes
Joliet	584	100%	Mechanical brush sweeper	Yes

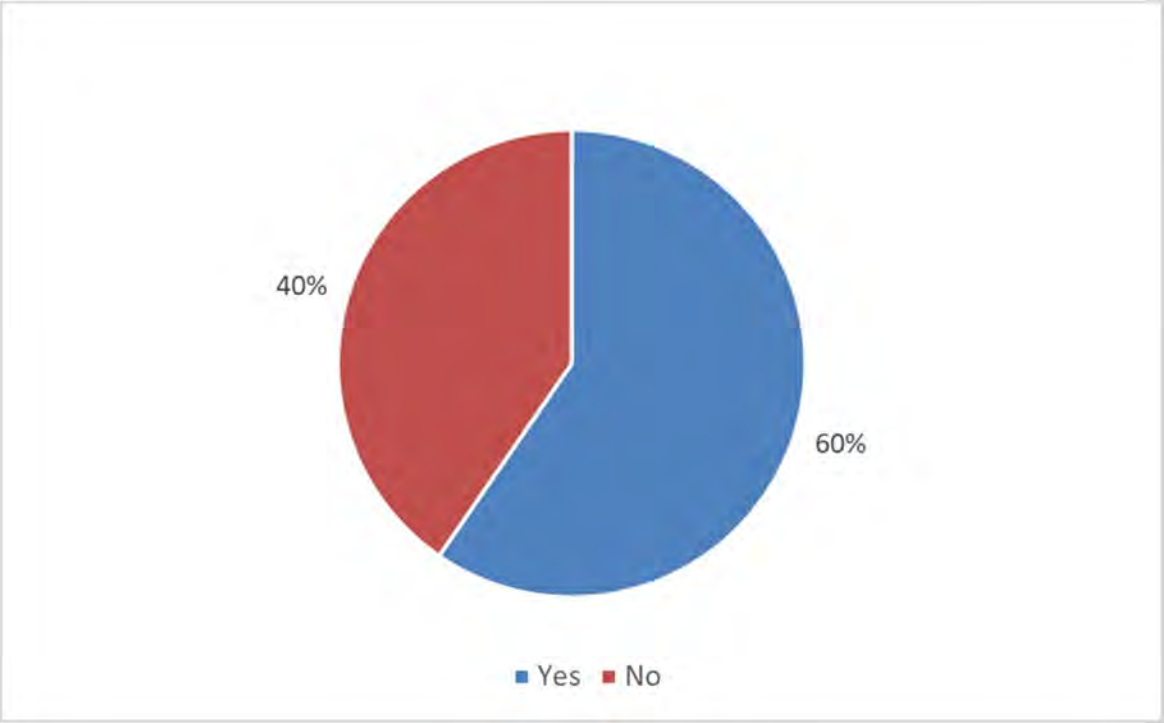
Community	Centerline Miles Swept	Percentage of centerline miles that are curb/gutter	Sweeper Type	Increased Sweeping in Fall
Lisle	45	66%	Mechanical brush with vacuum assist	No
Lockport	103	100%	Mechanical brush sweeper	Yes
Lombard	145	100%	Mechanical brush sweeper	Yes
Manhattan	75	75%		No
Milton Township	25	100%	Mechanical brush sweeper	Yes
Minooka	63	75%	Mechanical brush with vacuum assist	No
Naperville	400	100%	Regenerative air with mechanical brush sweeper	No
Naperville Township	8	50%	Mechanical brush sweeper/Mechanical brush with vacuum assist	No
New Lenox	130.25	75%	Regenerative air with mechanical brush sweeper	Yes
North Riverside	33	100%	Mechanical brush sweeper	Yes
Oak Brook	55	66%	Regenerative air with mechanical brush sweeper	No
Oakbrook Terrace	73	100%	Mechanical brush sweeper	No
Orland Park	40	100%	Mechanical brush sweeper	No
Palatine	156	75%	Mechanical brush sweeper	Yes
Plainfield	196	75%	Regenerative air with mechanical brush sweeper/Mechanical brush sweeper	No
Romeoville	135	100%	Mechanical brush sweeper	Yes

Community	Centerline Miles Swept	Percentage of centerline miles that are curb/gutter	Sweeper Type	Increased Sweeping in Fall
Roselle	75	75%	Regenerative air with mechanical brush sweeper	No
Schaumburg	219	75%	Regenerative air with mechanical brush sweeper	Yes
Shorewood	60	100%	Mechanical brush with vacuum assist	Yes
Streamwood	96	100%	Regenerative air with mechanical brush sweeper	Yes
Warrenville	28	100%	Mechanical brush sweeper	Yes
Wayne Township	NA	NA	NA	NA
West Chicago	90	100%	Regenerative air with mechanical brush sweeper	Yes
Western Springs	97	100%	Mechanical brush with vacuum assist	No
Wheaton	167	75%	Mechanical brush sweeper/Mechanical brush with vacuum assist	Yes
Winfield	16	100%	Mechanical brush with vacuum assist	No
Winfield Township	NA	NA	NA	NA
Wood Dale	48	75%	Mechanical brush with vacuum assist	Yes
Woodridge	195	100%	Mechanical brush with vacuum assist	Yes
York Township	NA	NA	NA	NA

The questionnaire also asked respondents to provide information on the percentage of centerline miles in their jurisdiction that have curb and gutter. This information is important as streets with curb and gutter typically drain into storm sewer systems that discharge directly to surface water with little to no pollutant filtering. Of the communities, townships, and agencies that responded, 29 (56%) have 100% curb/gutter roads, 15 (29%) have 75% curb/gutter roads, 5 (10%) have 66% curb/gutter roads, 2 (4%) have 50% curb/gutter roads, and 1 (2%) has 33% curb/gutter roads. Roads that do not have curb and gutter typically have roadside grassed swales.

Respondents were also asked if street sweeping efforts were increased in the fall season to due to the increased presence of leaf litter in the roadway. Of the communities, townships, and agencies that responded, 60% increase sweeping during the fall season (Figure 6).

Figure 6. *Number of Communities and Townships that Increase Sweeping in the Fall.*



Data obtained from the questionnaire was also used to assess when communities, townships, and agencies begin their street sweeping operations and how many times per month street sweeping is conducted. Figure 7 depicts the number of units of government responsible for roadways reporting active street sweeping by month and land type (residential areas, arterial roads, commercial/industrial areas, and central business district). The majority of the communities, townships, and agencies reported that that street sweeping is conducted between May and November. Figure 8 shows the distribution of street sweeping event frequencies per month in residential areas.

Figure 7. *Number of Communities, Townships, and Agencies Reporting Active Street Sweeping by Month and Land Type.*

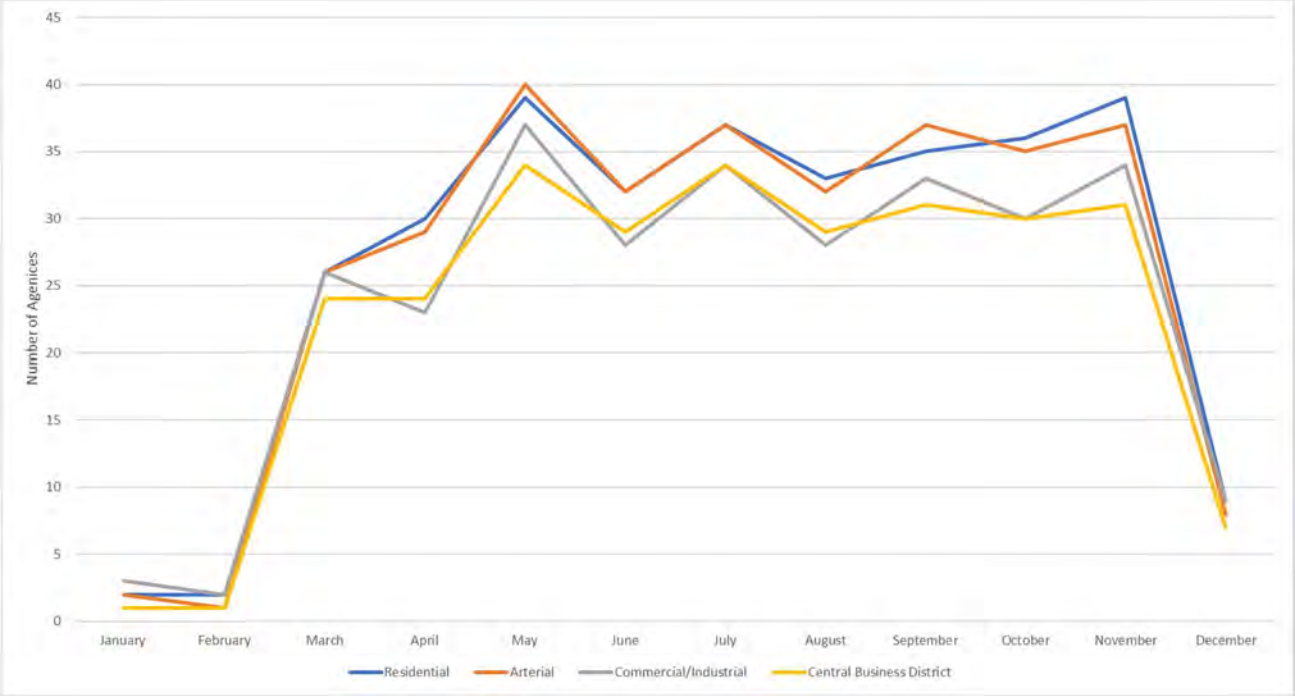
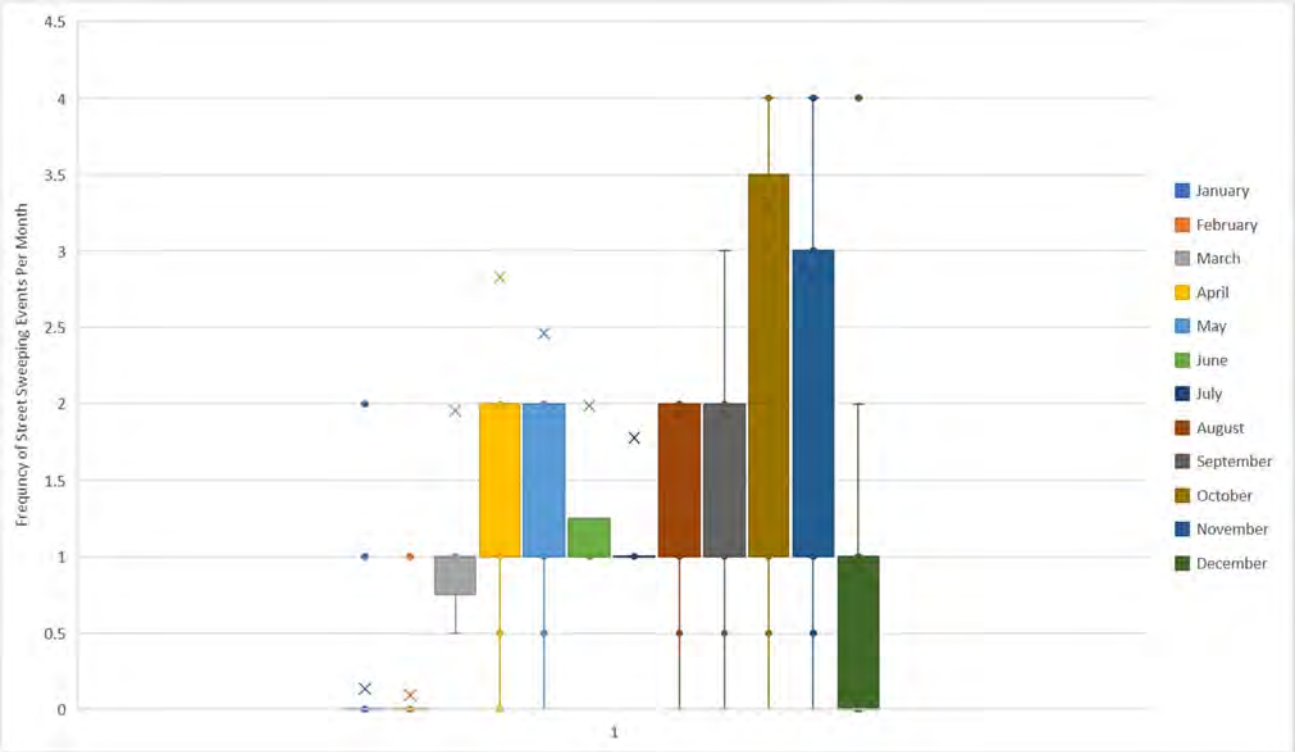


Figure 8. *Distribution of Street Sweeping Event Frequencies per Month in Residential Areas.*



3.2 Leaf Litter Collection Practices

The questionnaire also collected information on leaf collection programs conducted by study area communities, townships, and agencies. Respondents provided information including if a program was in place, who collects the leaves, where the leaves are placed by residents for pickup, and if residents place leaves in bags/bins or directly on the street (Plate 2). They also indicated the frequency of leaf collection and if streets are swept right after collection. The questionnaire asked how many centerline miles the leaf litter collection program covers and what percentage of the centerline miles were curb and gutter. The frequency of leaf litter collection was also reported by month and land type (i.e., residential, arterial, and commercial) and it was noted if the community alters leaf litter collection schedule due to rainfall. Communities, townships, and agencies also provide details on methods of resident notification on upcoming leaf litter collection efforts and education on the benefits of mulching/composting leaves.

Plate 2. *Leaf Collection in Palatine; https://www.palatine.il.us/235/Leaf-Collection.*

All 48 of the communities and 2 of the townships that submitted completed questionnaires have a leaf litter collection program. It should be noted that several communities misunderstood Question #12: “Do you have a leaf collection program for residents?” on the questionnaire, and they incorrectly answered “no”. These communities do not have a city/village/town run program but instead utilize their contracted waste hauler to collect leaves as a part of their municipal garbage service. Information on these programs was obtained through internet searches or by direct contact with the community or township. These municipalities are denoted with a * in Table 3.

Table 3 summarizes the leaf litter data collected. Leaf litter and leaf collection information was used to create a visual representation of current leaf collection practices in the watershed by community (Map 2) and township (Map 3).

Table 3. *Summary of Leaf Collection Practices.*

Community	Leaf Collection Program	Collection type	Follow w/Street Sweeping
Addison	Yes	In bags/bins	No
Barrington*	Yes	In bags/bins	No
Bartlett*	Yes	In bags/bins	No
Bensenville*	Yes	In bags/bins	No
Berkeley	Yes	In bags/bins	No
Bloomingdale*	Yes	In bags/bins	No
Bolingbrook	Yes	In bags/bins	No
Brookfield	Yes	Directly on parkway	Yes
Carol Stream	Yes	In bags/bins	No
Channahon	Yes	In bags/bins	No
Crest Hill*	Yes	In bags/bins	No
Downers Grove*	Yes	In bags/bins	No
Downers Grove Township*	No	NA	NA
Elk Grove Village	Yes	Directly on ground/street	Yes
Elmhurst	Yes	In bags/bins	No
Elwood*	Yes	In bags/bins	No
Frankfort	Yes	Directly on parkway	Yes
Glen Ellyn	Yes	In bags/bins	Yes
Glendale Heights	Yes	In bags/bins	Yes
Hanover Park*	Yes	In bags/bins	No
Hoffman Estates*	Yes	In bags/bins	No
Illinois DOT	No	NA	NA
Itasca	Yes	In bags/bins	Yes
Joliet*	Yes	In bags/bins	No
Lisle	Yes	Directly on parkway	Yes
Lockport	Yes	Directly on parkway	Yes
Lombard	Yes	In bags/bins	Yes
Manhattan	Yes	In bags/bins	No
Milton Township	No	NA	NA
Minooka*	Yes	In bags/bins	No
Mokena	Yes	In bags/bins	No
Naperville	Yes	Directly on ground/street	Yes
Naperville Township	Yes	Directly on parkway	No
New Lenox	Yes	Directly on parkway	Yes
North Riverside*	Yes	In bags/bins	No
Oak Brook	Yes	Directly on parkway	Yes
Oakbrook Terrace	Yes	In bags/bins	No
Orland Park	Yes	In bags/bins	No

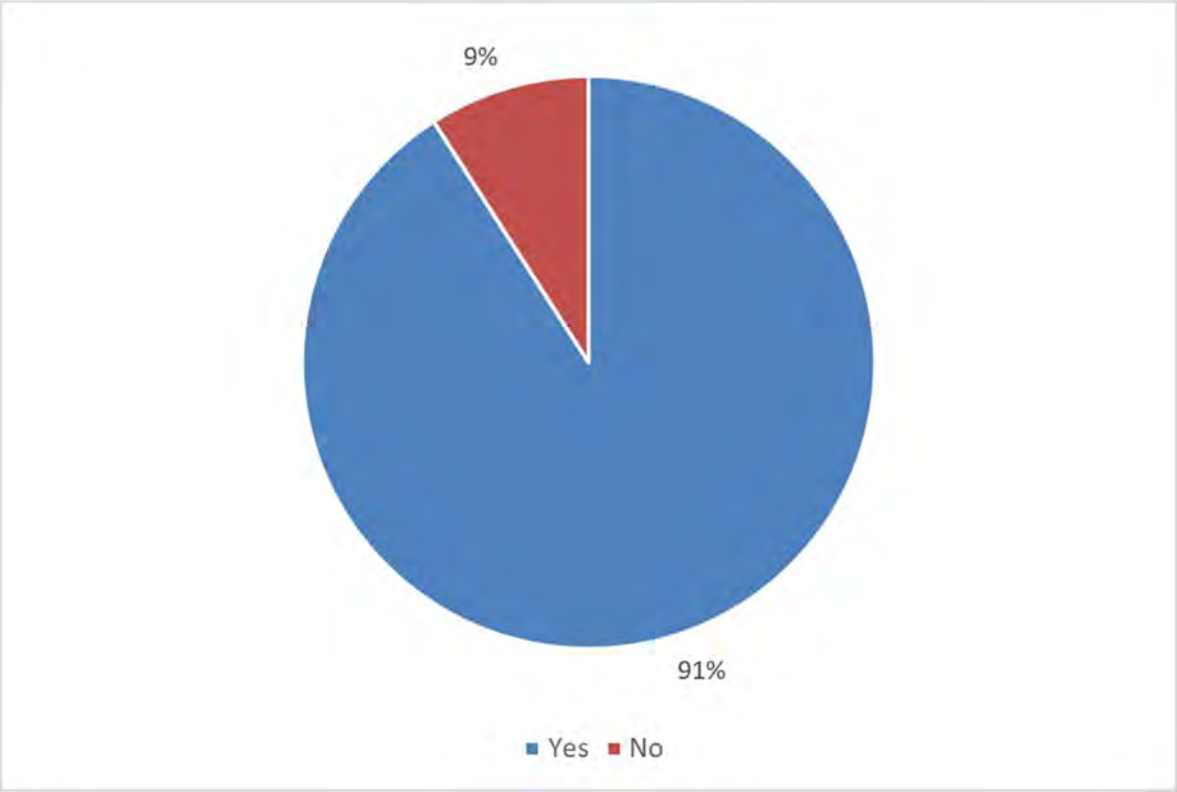
Community	Leaf Collection Program	Collection type	Follow w/Street Sweeping
Palatine	Yes	Directly on ground/street	Yes
Plainfield*	Yes	In bags/bins	No
Romeoville*	Yes	In bags/bins	No
Roselle*	Yes	In bags/bins	No
Schaumburg*	Yes	In bags/bins	No
Shorewood	Yes	Directly on parkway	Yes
Streamwood	Yes	In bags/bins	No
Warrenville*	Yes	In bags/bins	No
Wayne Township*	No	NA	NA
West Chicago	Yes	In bags/bins	No
Western Springs	Yes	Directly on ground/street	No
Wheaton*	Yes	In bags/bins	No
Winfield	Yes	In bags/bins	No
Winfield Township	Yes	Directly on parkway	No
Wood Dale	Yes	In bags/bins	No
Woodridge	Yes	In bags/bins	Yes
York Township	No	NA	NA

*Information on leaf collection program was obtained via internet searches or direct follow-up with the community or township.

Figures 9, 10, and 11 below show the number of communities and townships that responded that have leaf litter programs in place, the type of leaf collection, and if the community/township follows collection with street sweeping. 37 (74%) of the communities collect leaves though a bagging program. Nine (18%) of the responding communities pile leaves on the parkway and four (8%) pile leaves on the street. Fifteen (30%) communities street sweep after leaf collection. Additionally, 32 communities, township and agencies responded to the inquiry on whether or not leaf collection efforts were modified due to forecasted rainfall. Of those respondents, 28 make no changes to their collection schedule (88%), 2 collected leaves before the predicted rainfall (6%), and 2 collected after the predicted rainfall (2%).

Thirty two (32) communities, township and agencies responded to the inquiry on whether or not their agencies educational material encouraged composting and/or mulching of leaves. Of those that responded, 29 communities, townships, and agencies (90%) do promote composting and/or mulching of leaves through their educational materials.

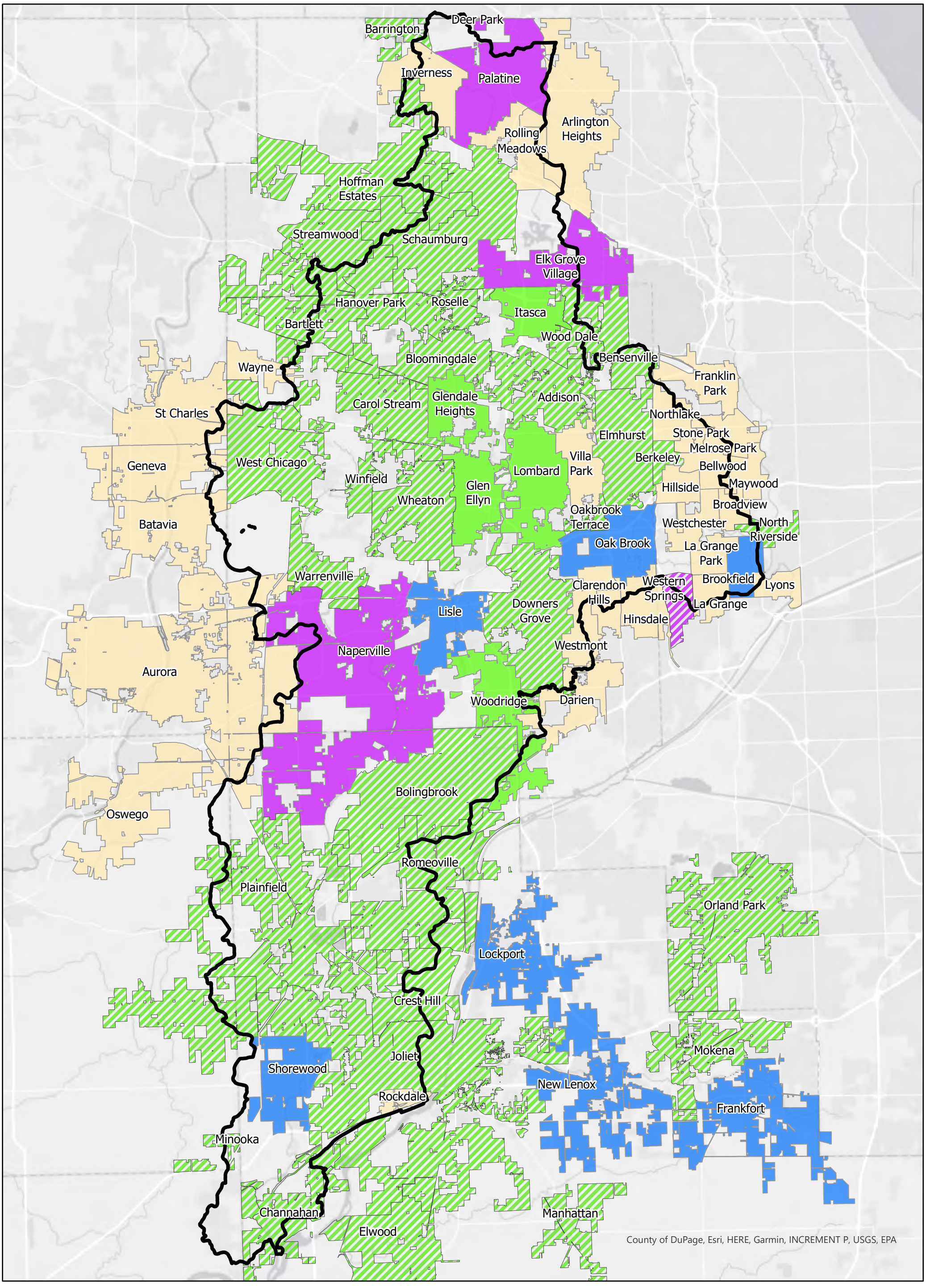
Figure 9. *Communities Townships with a Leaf Collection Program in Place.*



MUNICIPALITIES LEAF PROGRAM

MAP 2: LEAF COLLECTION PRACTICE BY COMMUNITY

DUPAGE RIVER SALT CREEK WORKGROUP



N

- In Bags/Bins (Follow w/ Street Sweeping)
- In Bags/Bins (Do NOT Follow w/ Street Sweeping)
- Directly on Ground/Street (Follow w/ Street Sweeping)
- Directly on Ground/Street (Do NOT Follow w/ Street Sweeping)
- Directly on Parkway (Follow w/ Street Sweeping)
- No Response
- ProjectArea

0 2.5 5 10 Miles

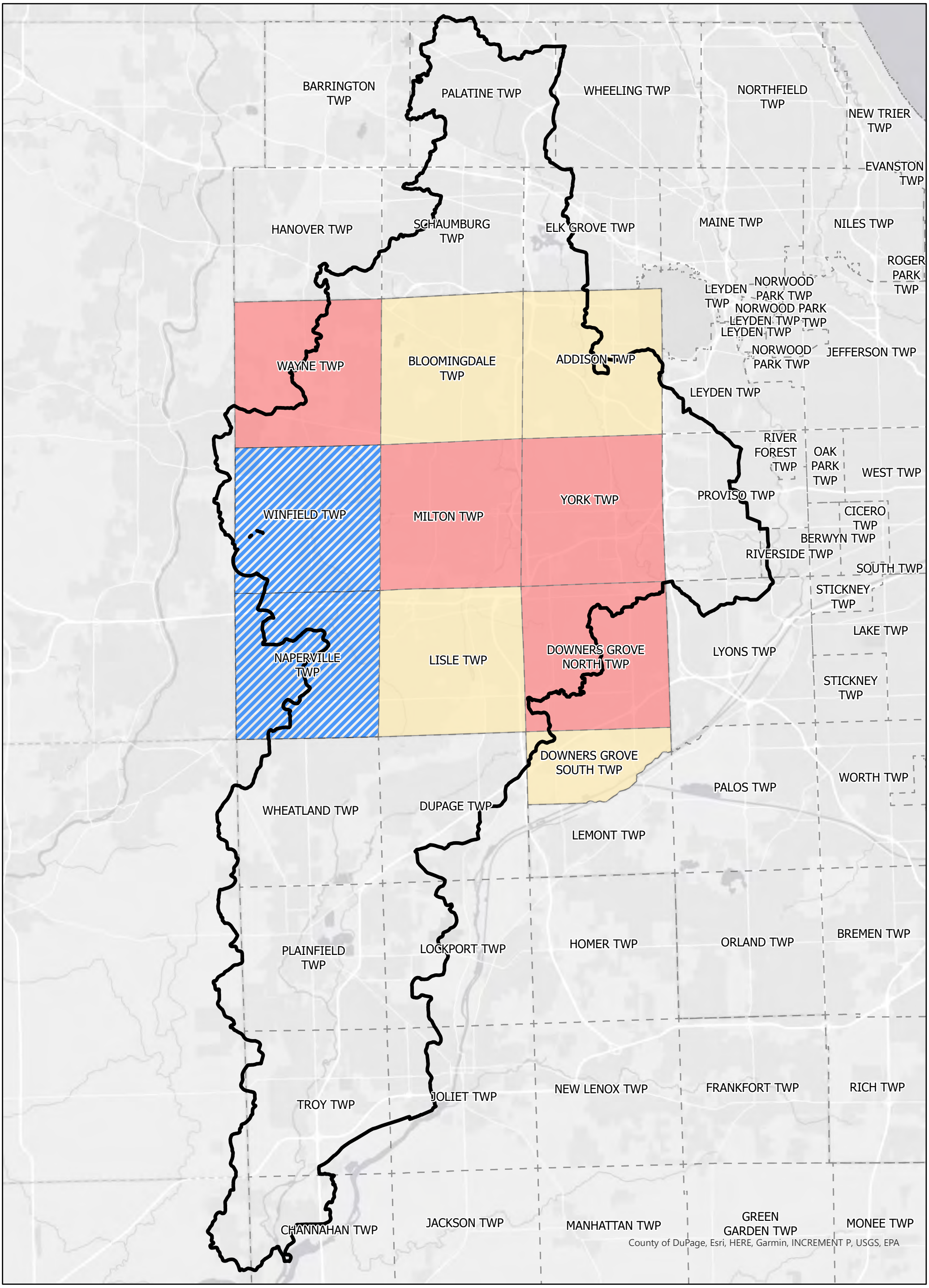
DuPage River Salt Creek Workgroup

BAXTER & WOODMAN Consulting Engineers

TOWNSHIPS LEAF PROGRAM

MAP 3: LEAF COLLECTION PRACTICE BY TOWNSHIP

DUPAGE RIVER SALT CREEK WORKGROUP



N

0 2.5 5 10 Miles

- Directly on Parkway (Do NOT Follow w/ Street Sweeping)
- No Leaf Collection Program
- No Response
- ProjectArea
- Township Boundary

DuPage River Salt Creek Workgroup

BAXTER & WOODMAN Consulting Engineers

Figure 10. *Type of Leaf Collection.*

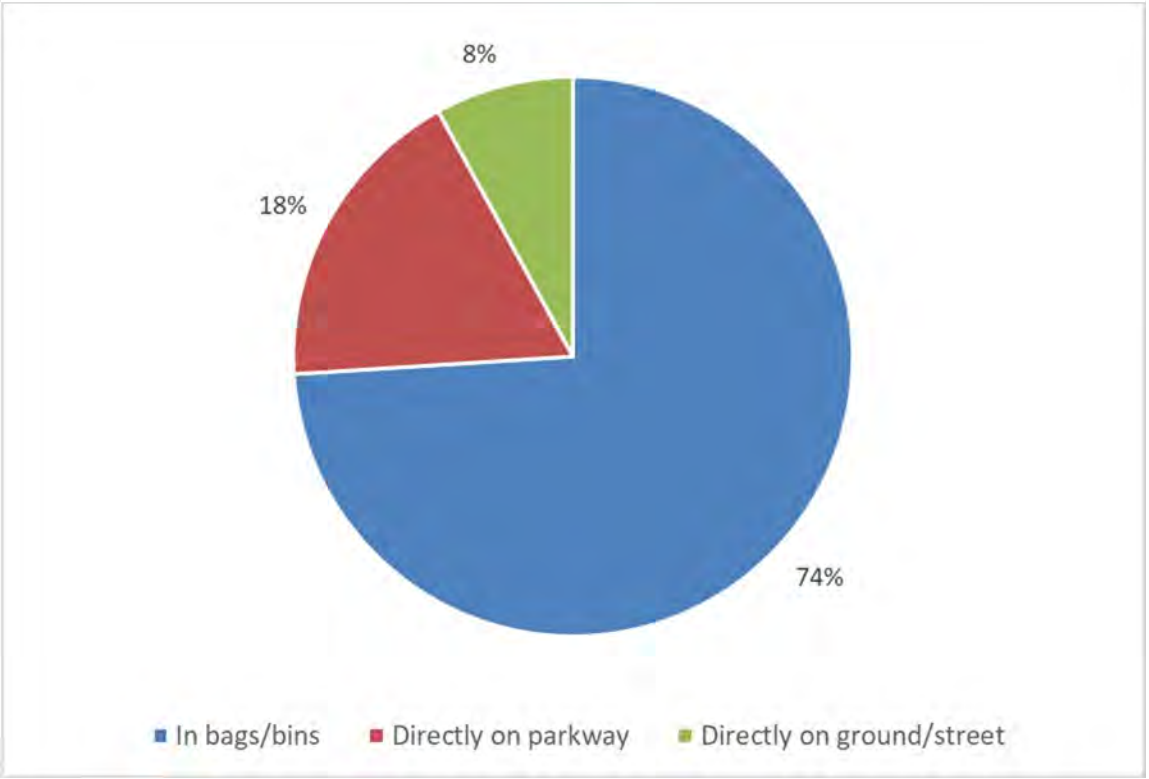
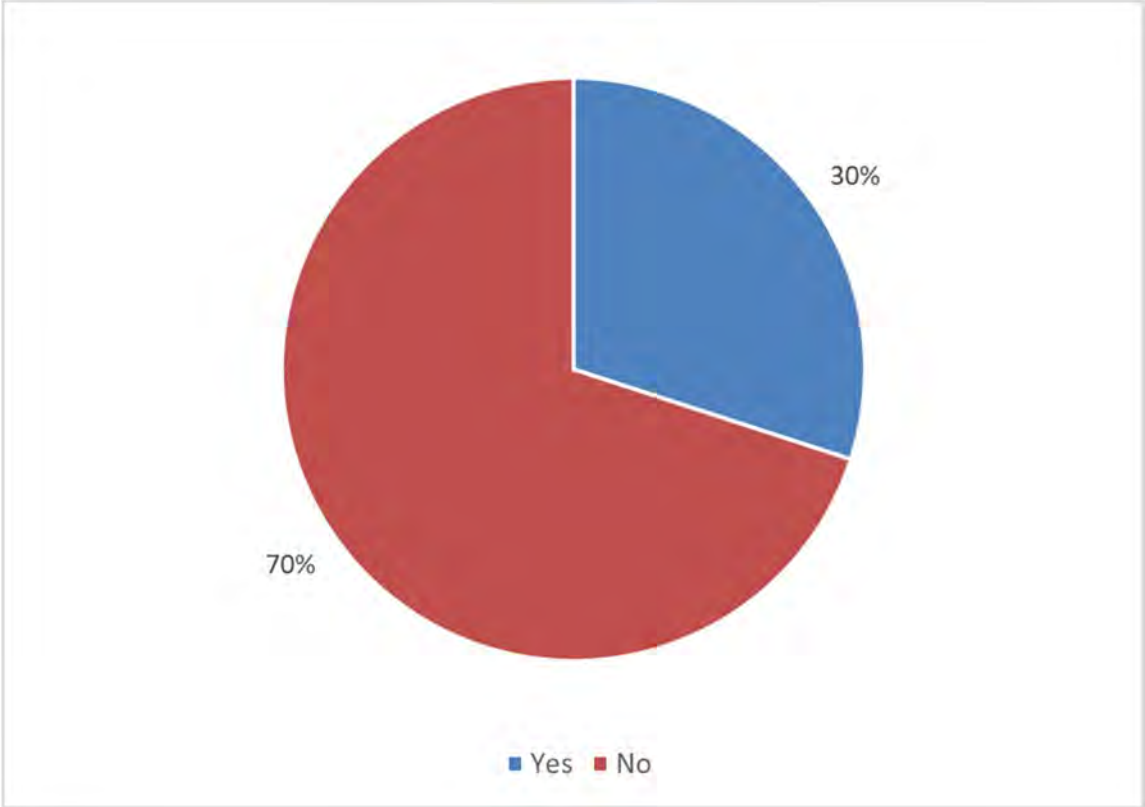


Figure 11. *Communities and Townships that Follow Leaf Collection with Street Sweeping*



A request for data on the mass of leaf collected by each community, township, and agency was also submitted to all who received a questionnaire. Eight communities responded to the request and provide data on the mass of leaves collected. The mass data from 2020 is include in Table 4. All of the mass data collected is summarized in Appendix D. The pounds (lb) of TP collected by each community was calculated using Volume-to-Weight Conversion Factors provided by the United States Environmental Protection Agency (US EPA, 2007 updated in 2016).

***Table 4**. 2020 Collected Leaf Mass Data.*

Community	lbs of Leaves	lb of TP
Elk Grove Village	1,835,904	99.05
Lisle	2,008,020	108.34
Addison	346,964	18.72
Streamwood	194,00	1.05
West Chicago	174,165	9.40
Lockport	614,700	33.16
Glen Ellyn	239,050	12.90
New Lenox	863,995	46.61

4. Effective Canopy Cover

Several studies have noted the strong correlation between canopy overhanging roads and the concentration of phosphorous in street sweepings (Kalinosky, 2015; Selbig W. , 2016). This relationship suggests that a major factor in optimizing the application of leaf litter and street sweeping resources to capture TP from streets would be to focus such efforts of high canopy areas. To better understand the distribution of canopy cover leaf litter on roads, the DRSCW and LDRWC developed a spatial file showing the current distribution of tree canopy overhanging roadways. Canopy coverage for the study area was generated using the tree canopy class of the high resolution land cover data developed by the Spatial Analysis Laboratory (SAL) of the University of Vermont with the assistance of The Morton Arboretum. The data set obtained provided complete coverage of the study area. The dataset was created using imagery, LiDAR, and ancillary vector data sets to populate an object based image analysis system supported by tens of thousands of manual corrections.

Road right-of-way (ROW) boundary, municipal boundary and township boundary data was obtained from each of the counties in the study area (Lake Co., Cook Co., DuPage Co, Kane Co. and Will Co.). The right-of-way (ROW) files were then merged into a single file. The ROW data was then adjusted by overlaying it with the tree canopy layer to identify the canopy coverage overhanging the ROW. A file was then created containing the common area of these two spatial files for the whole of the project area. This GIS file will be referred to as the effective canopy cover in the rest of the report.

Effective canopy cover percentages were then calculated by total roadway area, by watershed area, and by management agency. The agency effective canopy cover data was then coded for land use. Land Use Classification data was created by Chicago Metropolitan Agency for Planning. The watershed land use map will be available from DRSCW. To classify by land use, an Esri geoprocessing tool (Fishnet) was used to create a 10'x10' grid in the Effective canopy cover layer. Another geoprocessing tool (Near) was used to assign the closest land use category to each cell within the file. Through a series of joins and merges (dissolves), the effective canopy cover was classified by land use and municipality ownership.

The Effective Canopy Cover data set can be found in Appendix E and an example is shown below in Tables 5 and 6. Examples of the land use classification and canopy data can be found in Map 4 and Map 5. The land use classification and canopy data included in Tables 5 and 6 and Maps 4 and 5 are not meant to be representative of the Effective Canopy Cover data for the watershed as a whole but were selected to show a variety of land uses and canopy cover data within two example areas.

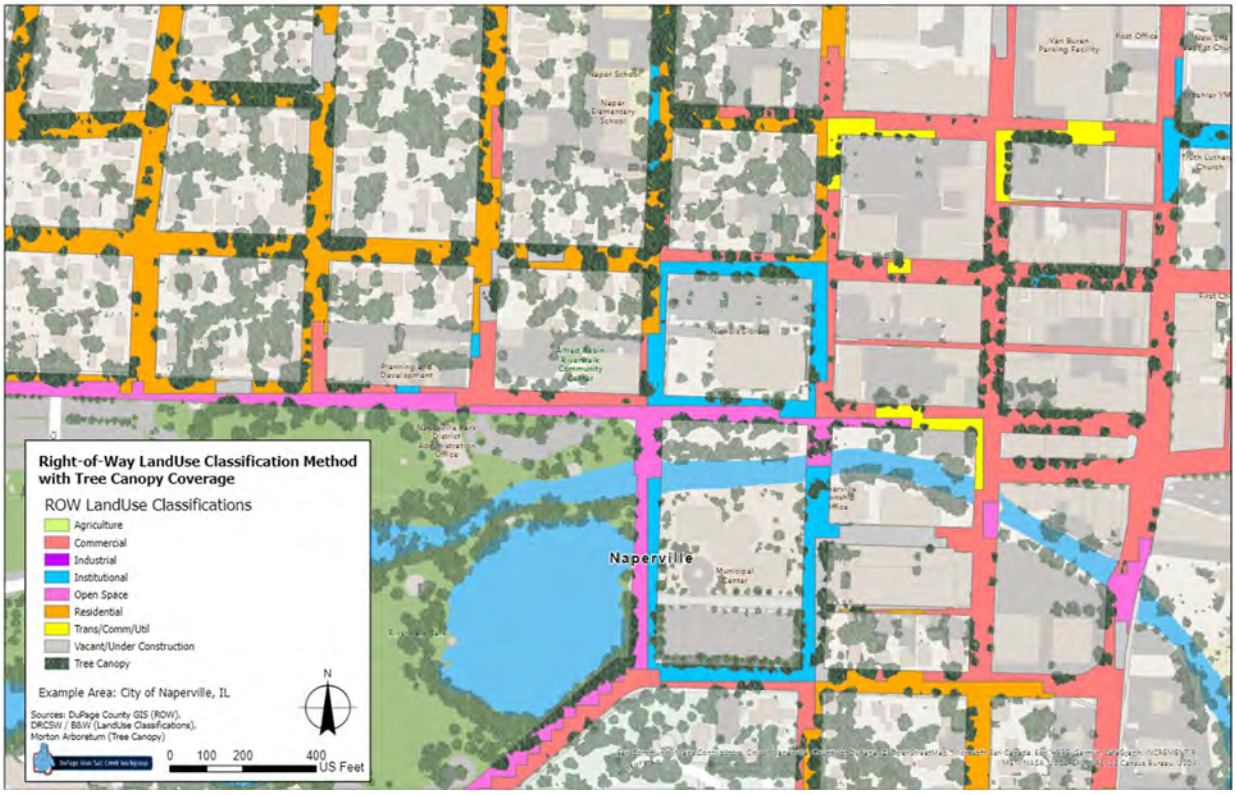
Table 5. *Example of Naperville's Effective Canopy Cover Data.*

Land Use Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	207,184	4,758	2%
Commercial	1,779,245	86,616	5%
Industrial	271,959	7,744	3%
Institutional	616,758	51,152	8%
Open Space	727,095	82,632	11%
Residential	575,792	21,501	4%
Transportation/Utilities	13,956,352	3,332,626	24%
Other	446,465	17,068	4%
Total	18,580,850	3,604,098	19%

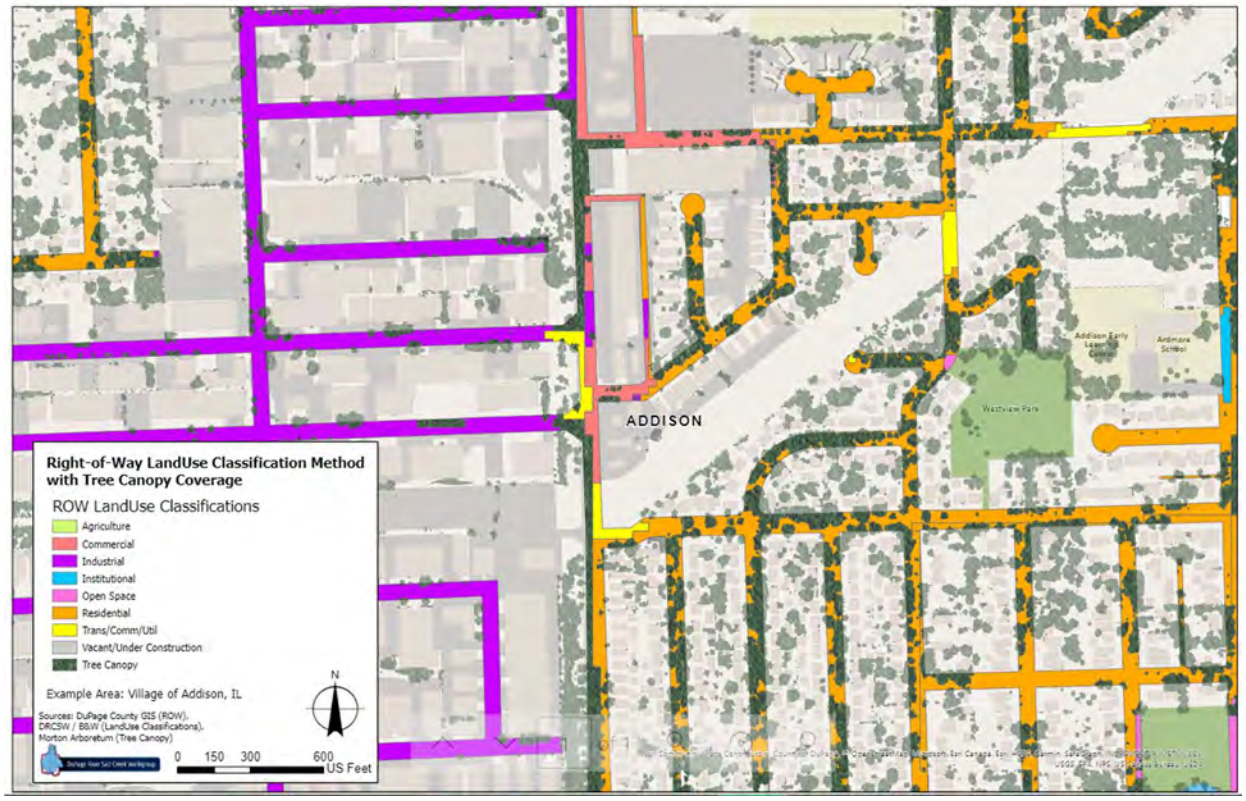
Table 6. *Example of Addison's Effective Canopy Cover Data.*

Land Use Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	2,630	0	0%
Commercial	427,785	18,907	4%
Industrial	847,573	45,938	5%
Institutional	151,188	15,375	10%
Open Space	538,484	74,856	14%
Residential	294,621	25,732	9%
Transportation/Utilities	2,757,671	830,226	30%
Other	195,925	7,529	4%
Total	5,215,877	1,018,564	20%

Map 4. *Land Use Classification and Canopy Data for City of Naperville.*



Map 5. *Land Use Classification and Canopy Data for Village of Addison.*



The Effective Canopy Cover dataset shows there is wide variability in conditions across agencies. This data (Appendix E) was used to further characterize the distribution of effective canopy cover by land use types across the study area. A total of 83 units of government responsible for roadways account for a ROW area of 8.8 square miles. 2.1 square miles of this is covered by tree canopy giving the study area an average of 24% effective canopy cover along roads for all communities, townships, and agencies across all land use types.

The Land Use data utilized in the analysis identified eight different land use types, which varied in area (Figure 12) and effective canopy cover (Figure 13). The most prominent land use is residential, having both the highest proportion of the study area (66%), as well as the highest percent effective canopy coverage (31%). Open Space (16% effective canopy cover) and Institutional (13% effective canopy cover) designated areas have high effective canopy coverage, but since they contribute significantly less area than Residential across the study area, the amount of effective canopy cover they contribute overall is very low (1.7% and 3.5% respectively). On the other end, Agriculture (4%) and Industrial (7%) have the least effective canopy cover, and contribute very little ROW to the total study area. Commercial (7%), and Transportation/Communication/Utility (6%), and Other (9.1%) land use types fall in the middle of the spectrum with moderate contributions of effective canopy cover and ROW area.

Variability in area and percent effective canopy coverage will also affect the management responses of communities, townships, and agencies. For example, within the Residential land use type which accounts for the majority of Effective Canopy Coverage, coverage ranges from as high as 62% down to 1%. This suggests effective canopy coverage should be used on community level rather than a watershed-wide basis for determining street sweeping and leaf litter collection resource allocation.

Figure 12. *Percentage of ROW by Land Use Type.*

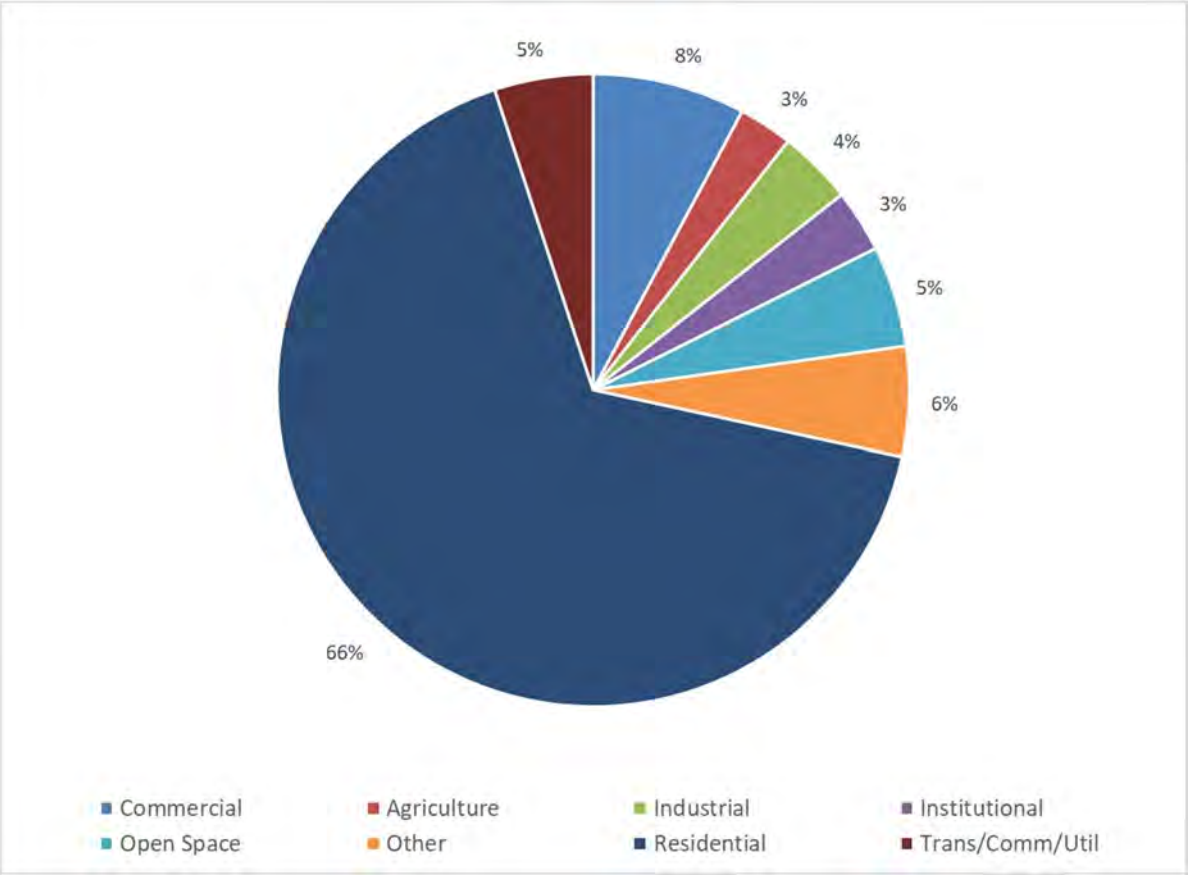
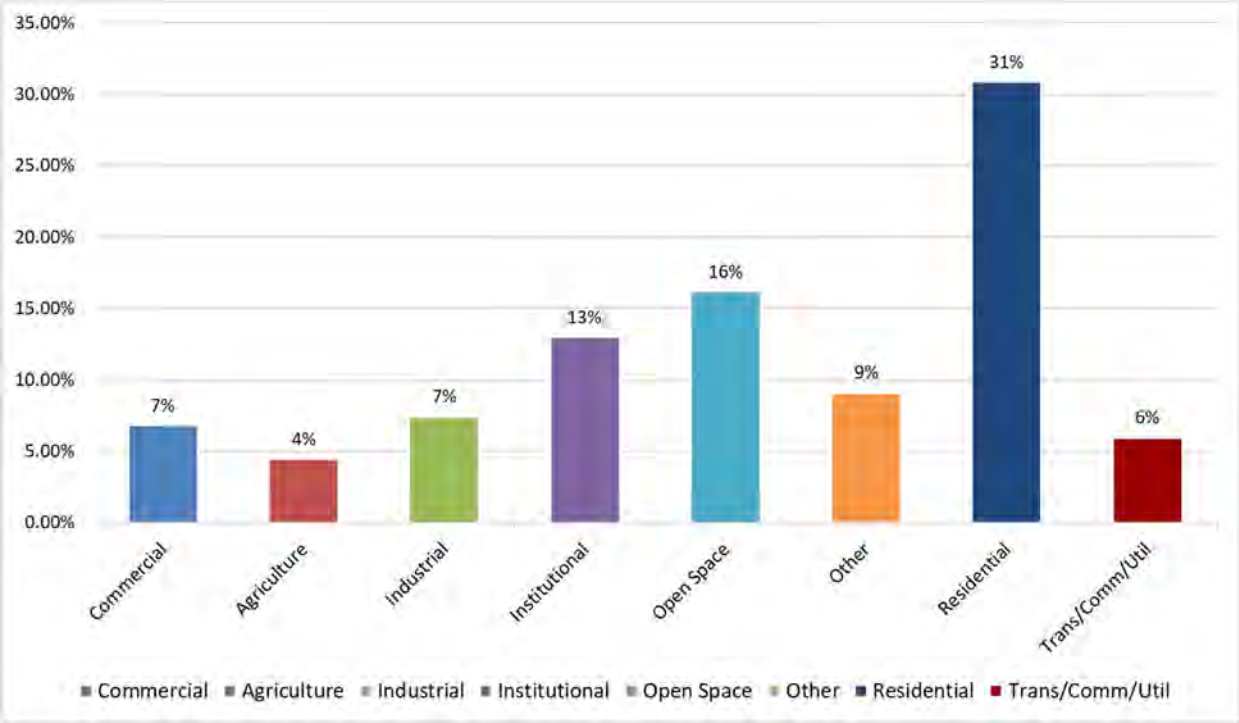


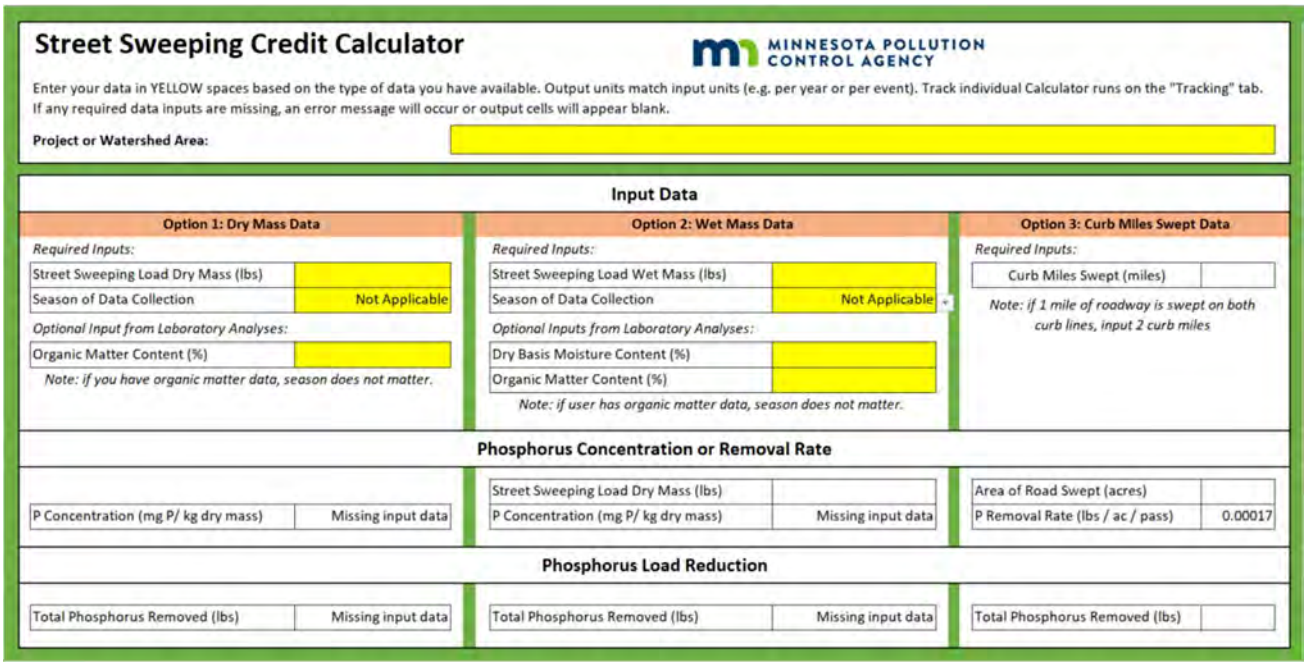
Figure 13. *Effective Canopy Cover Percentage by Land Use Type.*



5. Calculation of TP Removed by Existing Street Sweeping Practices

The total phosphorus being removed in the project area by current street sweeping efforts was estimated using the Minnesota Pollution Control Agency (MPCA) Street Sweeping Tool and the information obtained from the questionnaire. The MPCA Tool was developed for generating credits for street sweeping agencies in Minnesota. The tool was calibrated using observed TP removal rates from the Prior Lake street study previously referenced. The tool can estimate the TP removed using three data inputs: by wet mass, by dry mass, or by curb miles (Figure 14). For this study, the third option (by curb miles) had to be used to estimate the total phosphorus recovered during street sweeping as data on wet and dry mass was not available. This option is designed to return the most conservative estimates from the model since it cannot account for season, frequency of sweeping, weather, canopy cover, or any other factors that impact sweepings' amount or composition.

***Figure 14**. Snapshot of MPCA Street Sweeping Tool (Agency, 2021)*



Street Sweeping Credit Calculator

MINNESOTA POLLUTION CONTROL AGENCY

Enter your data in YELLOW spaces based on the type of data you have available. Output units match input units (e.g. per year or per event). Track individual Calculator runs on the "Tracking" tab. If any required data inputs are missing, an error message will occur or output cells will appear blank.

Project or Watershed Area:

Input Data

Option 1: Dry Mass Data		Option 2: Wet Mass Data		Option 3: Curb Miles Swept Data	
Required Inputs:		*Required Inputs:*		*Required Inputs:*	
Street Sweeping Load Dry Mass (lbs)		Street Sweeping Load Wet Mass (lbs)		Curb Miles Swept (miles)	
Season of Data Collection	Not Applicable	Season of Data Collection	Not Applicable	*Note: if 1 mile of roadway is swept on both curb lines, input 2 curb miles*	
Optional Input from Laboratory Analyses:		*Optional Inputs from Laboratory Analyses:*			
Organic Matter Content (%)		Dry Basis Moisture Content (%)			
Note: if you have organic matter data, season does not matter.		Organic Matter Content (%)			
		Note: if user has organic matter data, season does not matter.			
Phosphorus Concentration or Removal Rate					
P Concentration (mg P/ kg dry mass)	Missing input data	Street Sweeping Load Dry Mass (lbs)		Area of Road Swept (acres)	
		P Concentration (mg P/ kg dry mass)	Missing input data	P Removal Rate (lbs / ac / pass)	0.00017
Phosphorus Load Reduction					
Total Phosphorus Removed (lbs)	Missing input data	Total Phosphorus Removed (lbs)	Missing input data	Total Phosphorus Removed (lbs)	

The MPCA tool third option calculates TP removed (in pounds) using an average TP removal rate multiplied by curb miles. Using the questionnaire, communities, townships, and agencies provided the number of centerline miles included in their street sweeping program. It was assumed that this whole area was swept in one sweeping "session" before areas were re-swept in an agency's sweeping schedule. Centerline miles were multiplied by two to return curb miles and entered into the MPCA tool to return estimated TP removed per "session." Communities, townships, and agencies also reported the frequency that they swept per month in different land use zones. It was assumed that the total swept area was representative of all zones in the agency's purview; using the geospatial dataset, the percentage of right-of-way was classified by zone and then multiplied the TP removed per session. To return, the TP removed per year was multiplied by the number of

sessions per zone per year. Finally, all of the TP removed per zone per year were added back together to estimate the TP removed per year for the whole agency.

Equation 1. *Removal of TP using Centerline Miles.*

$$(centerline\ mile * 2) * MPCA\ TP\ removal\ rate = TP\ removed\ per\ session$$

Equation 2*. TP Removed per Year by Land Use.*

$$\begin{gathered}\big((TP\ per\ session * \%\ of\ ROW\ in\ zone_{residential}) * \#\ of\ sweeps\ per\ year\ in\ zone_{residential}\big)\\ +\big((TP\ per\ session * \%\ of\ ROW\ in\ zone_{industrial}) *\ \#\ of\ sweeps\ per\ year\ in\ zone_{industrial}\big)\\ +\big((TP\ per\ session * \%\ of\ ROW\ in\ zone_{arterial}) *\ \#\ of\ sweeps\ per\ year\ in\ zone_{arterial}\big)\\ = TP\ removed\ per\ year\end{gathered}$$

Initial results from the tool showed extremely low TP removal rates that were a fraction of the rates reported in the street sweeping literature. After conferring with Tetra Tech, who helped build the MPCA Tool, the low rates were identified as being a factor of the Tool's curb miles option. The Tool was purposely designed to dramatically undercount TP removal rates for agencies using curb miles in order to compel them to collect mass data. This caution is a feature of the Tools use to generate credits inside a regulatory framework. To resolve this Tetra Tech supplied the authors of this report with the original data from the Minnesota P8 that was used to create the MPCA tool. This data was then used to create a more accurate removal rate. The P8 data includes canopy cover data, allowing the removal rates of Minnesota input agencies with similar effective canopy cover to the study area to be identified to calculate a new rate. The average effective canopy cover in the study area was calculated to be 24%. Minnesota P8 input agencies with of greater than or equal to 17% effective canopy cover were selected to be used for the calculation of the new removal rate. Both a 25th and a 50th percentile rate was calculated. The 25th percentile represents the bottom 25% of calculated removal rates and the 50th percentile represents the bottom half of the calculated removal rates. The rates for the original MPCA tool and the new calculated rates are shown in Table 7. The new rate was then replaced in the formula from the MPCA tool. The data and new rate calculation can be found in Appendix F. Any variation in the amount of phosphorus from different tree species was not considered in the analysis.

Table 7. *Rate Comparison (lbs/acre/event).*

Percentile	25%	50%
MPCA Tool Rate	0.00017	0.00020
New Rate	0.072681	0.127197

Based on the 48 communities, 6 Townships, and 1 agency that responded representing approximately 77% of the watershed area, the approximated TP removed from DRSCW and LDRWC watersheds is 6,870 pounds per year (Table 8). The 25th percentile rate was used for this study as a conservative estimation; the 50th percentile rate pounds of TP per year is almost twice as much as the 25th percentile.

Table 8. *Estimated Total Phosphorus Collected by Responding Communities and Townships across DRSCW and LDRWC Watersheds (lbs TP/year).*

	25th Percentile Rate	50th Percentile Rate
All Roads	**6,870**	12,021
Curb/Gutter Roads	6,218	10,882

The following figures show the distribution of the TP data for the 25th and 50th percentile rates of the communities and townships that responded. Figure 15 displays the data in a box and whisker plot and includes the means, medians, and outliers of the TP data. Most of the communities and townships fit within the distribution with the exception of a few outliers. Figures 16, 17, 18, 19, and 20 are histograms of the data with the number of communities/townships that removed a certain poundage of TP per year. Figure 10 shows the TP removed from both the 25th and 50th percentile rates and both road types. The distribution for the 50th percentile TP removal is larger than the 25th percentile TP removed. The average TP removed was 127-140 pounds per year and 222-245 pounds per year for the 25th and 50th percentiles, respectively. Communities on the lower end of the distribution are either smaller communities with fewer curb miles than larger communities, or are communities with less frequent street sweeping.

Appendix G contains the 25th and 50th total phosphorus (lbs TP/year) collected rates for all communities, townships, and agencies with a street sweeping program. Rates for both curb and gutter only and all roads are included.

Figure 15. *Distribution of Removed Phosphorus per Year.*

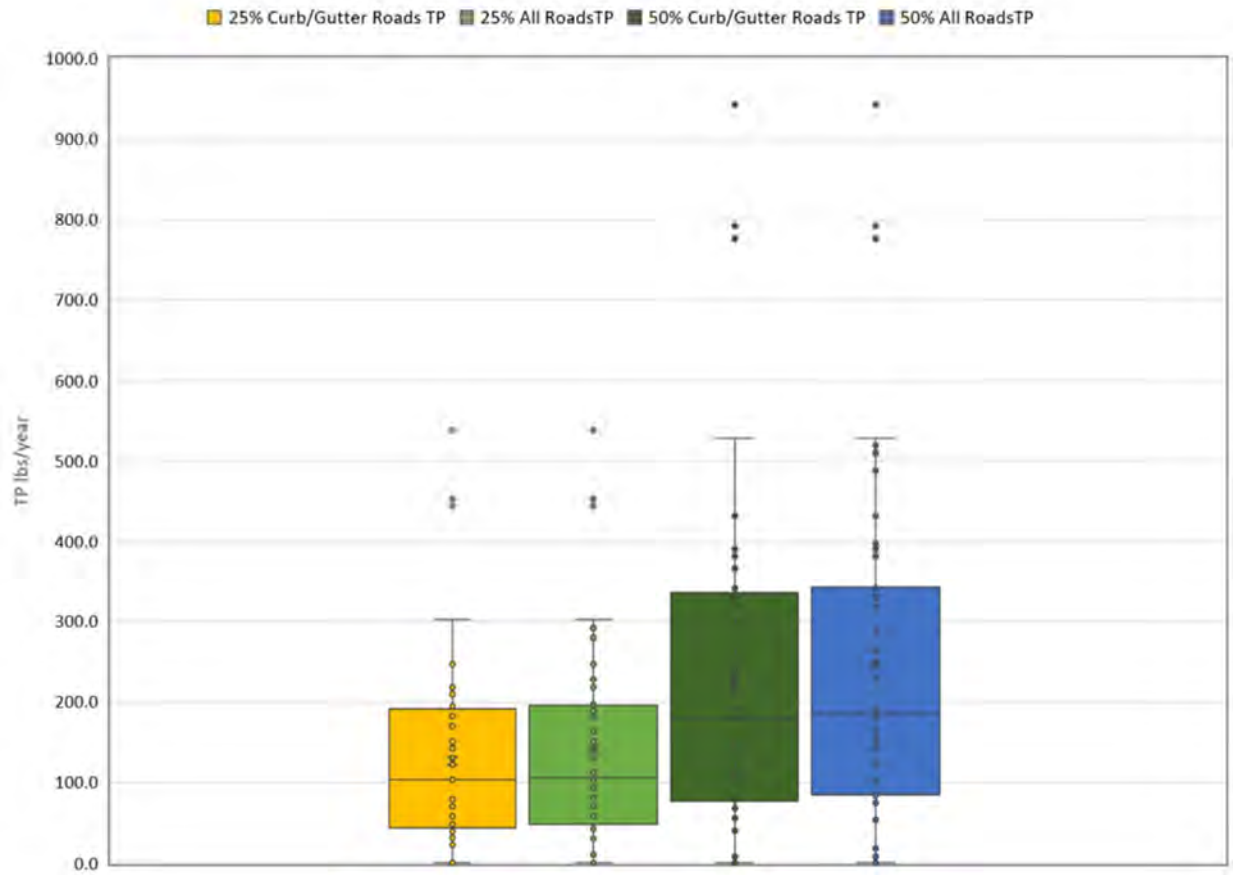


Figure 16. *Distribution of TP Removed: 25th and 50th Percentile Rates, All Roads and Curb/Gutter Roads.*

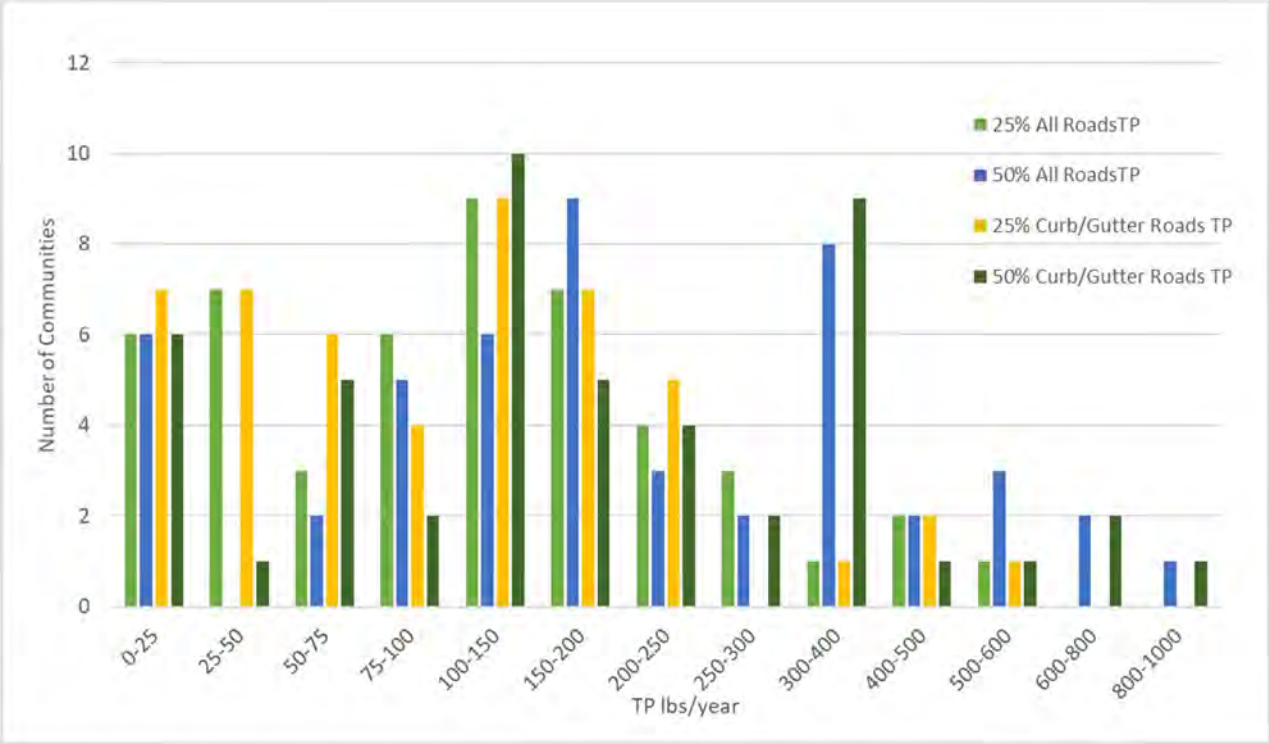


Figure 17. *Distribution of TP removed: 25th Percentile Rate, All Roads and Curb/Gutter Roads.*

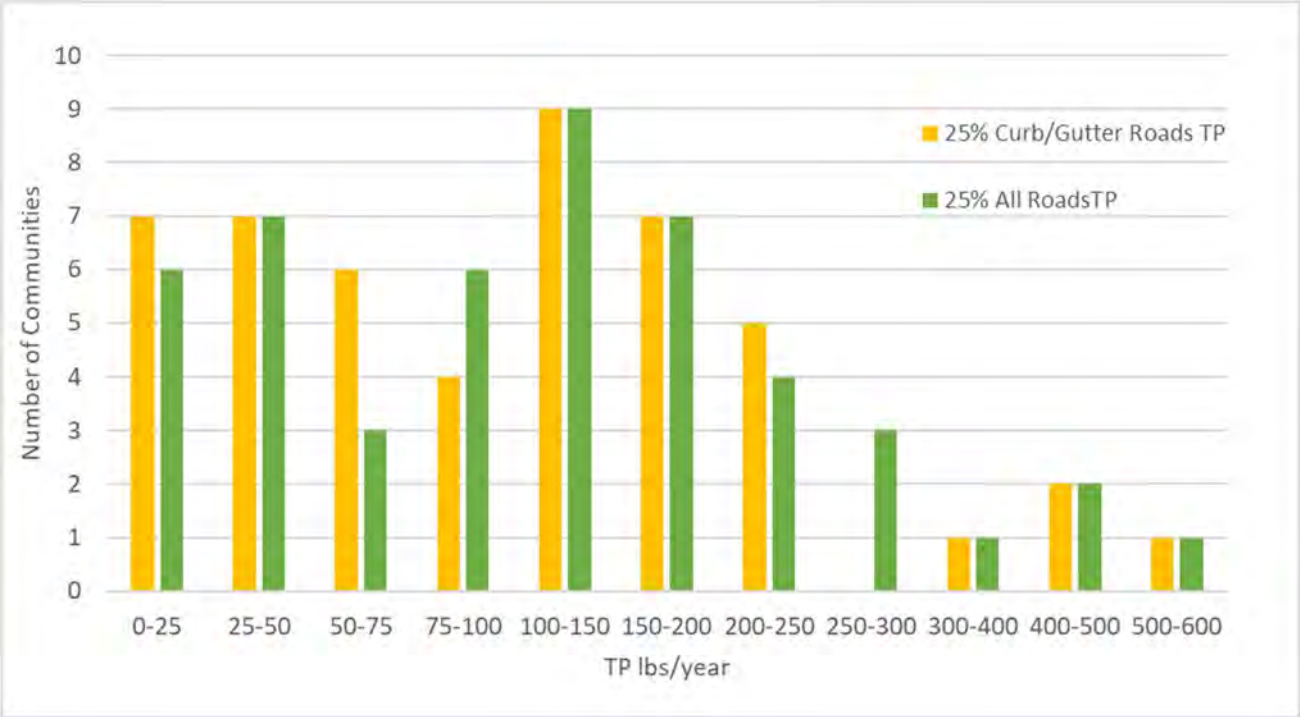


Figure 18. *Distribution of TP Removed: 50th Percentile Rate, All Roads and Curb/Gutter Roads.*

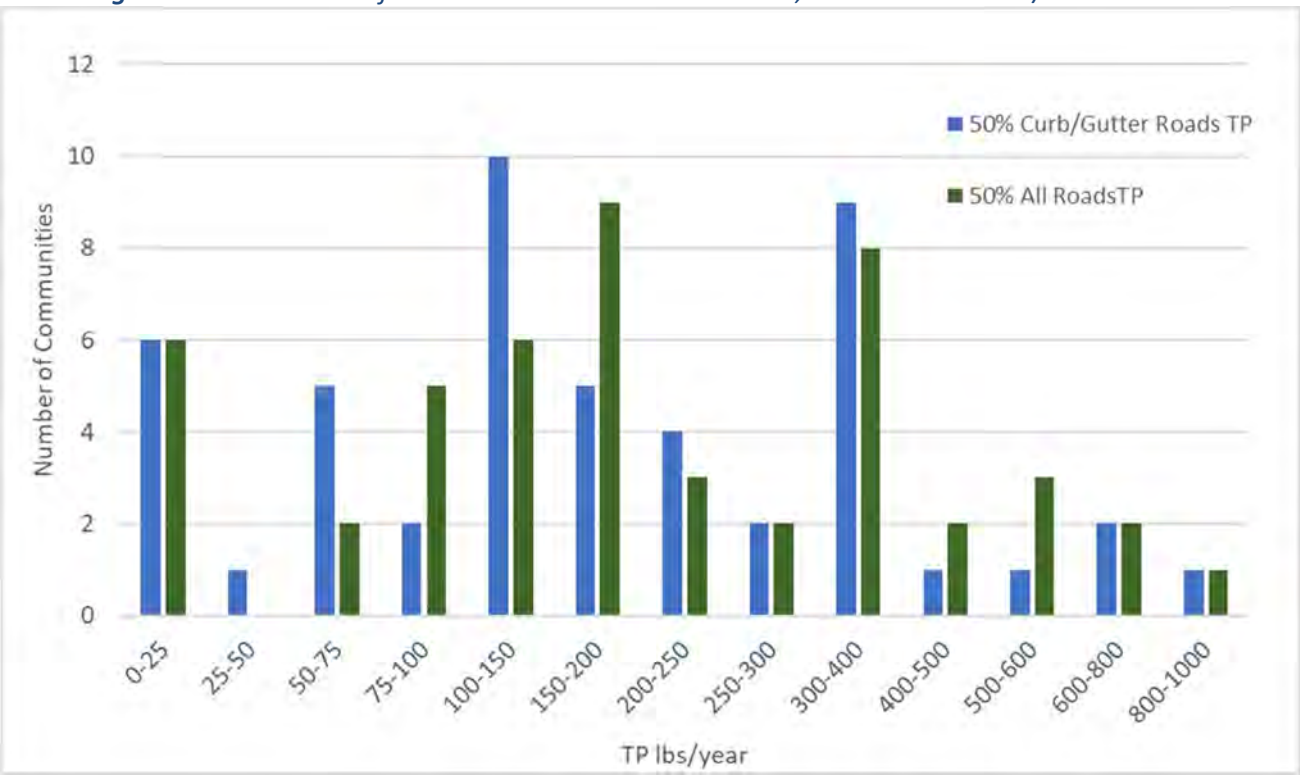


Figure 19. *Distribution of TP Removed: 25th and 50th Percentile Rates, All Roads.*

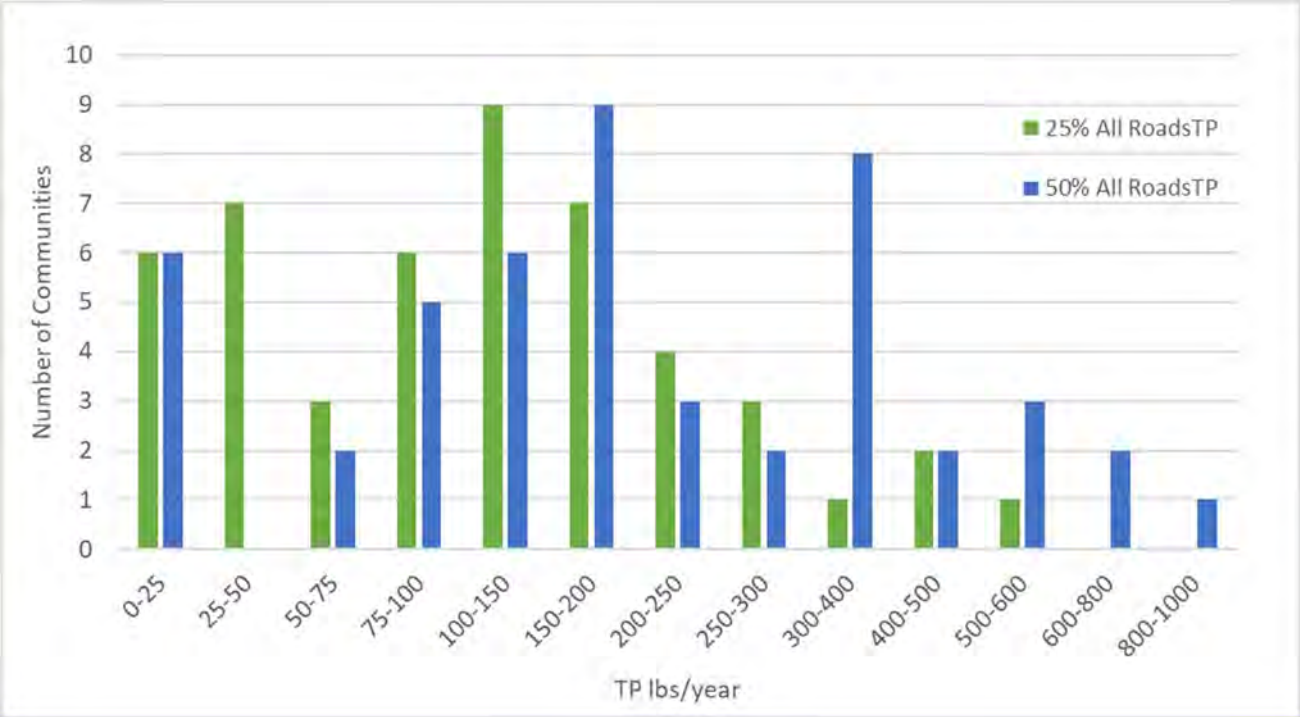
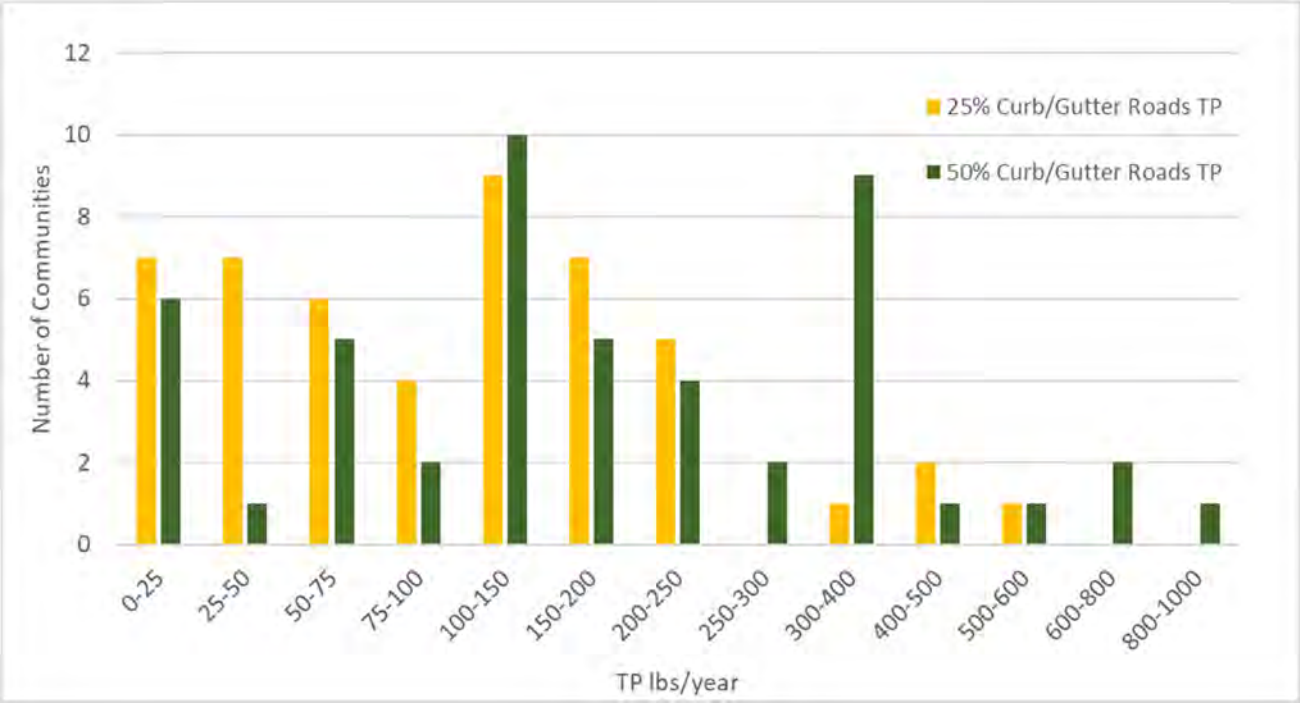


Figure 20. *Distribution of TP Removed: 25th and 50th Percentile Rates, Curb/Gutter Roads.*



6. Opportunities for Reducing Total Phosphorus

The analysis and results provide an adequate quantification of the total phosphorus (TP) captured by current leaf litter and street sweeping practices. Based on published analyses and a review of the data gathered via the questionnaire, several opportunities exist to further reduce TP in stormwater runoff by modifying street sweeping and leaf litter management practices.

The opportunities and recommendations for possible practice enhancements are listed below in order of their suspected effectiveness in enhancing TP capture. No attempt has been made at this time to attach reduction totals to these recommendations or evaluate the feasibility or significance of each recommendation. The recommendations were aimed at optimizing TP abatement in the sense that they seek to maximize capture of TP without increasing the resources allocated to leaf litter pickup and street sweeping.

The recommendations need to be interpreted in relation to the agency's priorities and in relation to the enhancement or reduction of the capture of other road pollutants (PAHs, metals, and chlorides). It should be also noted that the efficiency of further enhancements to NPS TP capture needs to be compared to the scale and marginal cost of capture of TP at Publicly Owned Treatment Works (POTWs). This latter evaluation will be included in the Nutrient Implementation Plan (NIP) due in December 2023.

- Street Sweeping after Leaf Collection

Several communities in the study area are not sweeping streets in coordination with leaf collection programs. Following leaf collection, street sweeping may remove residual leaf litter remaining in the street, thus reducing the amount of associated TP entering the storm drain system. Changing the street sweeping schedule to align with leaf collection could have no cost impact on the program to the extent it can be performed by existing personnel.

- Increasing Street Sweeping Frequency in Leaf Collection Months (Fall)

Community street sweeping schedules are generally set on a regular basis (events / month). Increasing the frequency of street sweeping in the leaf collection months would better capture leaf litter deposited between storm events, better preventing leaves and associated TP from entering the storm drain system. Increases in fall sweeping frequency could be offset with decreases in non-leaf litter periods to reduce or eliminate any cost impacts associated with timing or frequency changes. Communities, townships, and agencies can further optimize the impact of their sweeping efforts on TP reduction by increasing sweeping in the Fall in areas with high percentage canopy cover. Percentage canopy cover by land use type by municipality is included in Appendix E.

- Increasing Sweet Sweeping Frequency in Spring.

While the greatest annual contribution to TP in stormwater comes from fall leaf litter, there is a second smaller increase relative the observed monthly loadings in the spring (Kalinosky, 2015; Selbig W. , 2016). While increased spring sweeping would not offer as large a TP reduction as increased Fall sweeping, it is plausible that early spring TP releases into a river system are more impactful per unit of mass than those in Fall (Bothwell, 1988; Biggs, 1995; Rosemond, 1993; Hill & Dimick, 2002; Bushong & Bachmann, 1989; Van Nieuwenhuyse & Jones, 1996). Cost increases from increased sweeping in spring could be offset by reducing sweeping during summer months.

- Expansion of Leaf Litter Collection Programs

While street sweeping is performed at some level in each study area community, some communities in the study area do not have a leaf collection program. Implementation of a leaf litter collection program in conjunction with the street sweeping program would further reduce the amount of leaf litter entering the storm drain system or leaching TP into stormwater runoff.

- Prioritizing Street Sweeping by Canopy Cover

A geospatial inventory of tree canopy cover in ROW areas was developed for the DRSCW and LDRWC watersheds and for each community and township (Appendix E). Prioritizing street sweeping efforts in areas with relatively high canopy cover would increase the efficiency of removing TP in stormwater runoff. This would involve increasing the frequency of sweeping in high canopy cover most importantly in the spring and Fall. Cost increases from increased sweeping in high canopy areas could be offset by reducing sweeping in low canopy areas. The prioritization of increasing sweeping in high canopy areas over low canopy areas will also need to be balanced with the other objectives of street sweeping such as trash collection and the reduction of other pollutants.

- Use of Weather Forecasting

Weather forecasting can be used to manage the timing of leaf collection events. Collecting leaves before storm events will prevent the washing of leaves into the storm drain system, and reduce the amount of leached TP in stormwater runoff. Utilizing weather forecasting also has the added benefit of ensuring storm drains are clear and do not become blocked which can cause localized flooding. While it may be infeasible to sweep an entire large community based on weather forecast, higher tree canopy areas could be prioritized and maintained based on forecast, at low cost to the program. The questionnaire did not ask respondents about their use of weather forecasting but in a DRSCW survey of agencies' snow fighting operations, 30 agencies out of 41 respondents reported using a weather forecasting service (73%).

- Public Education Outreach

Project area stormwater authorities, DRSCW, LDRWC, or other public partners could create public outreach materials for communities and their residents to educate on the impact of leaves and phosphorus on surface water quality and what types of leaves leach the most phosphorus. The outreach materials should include information about not mowing or grinding up leaves before placing them at the curb for collection because this increases the leachability of the leaves. Residents should be informed that leaving a space between the curb and the leaf pile can also reduce phosphorus runoff. Outreach materials should also provide information tailored to landscaping maintenance companies regarding proper landscape waste handling practices such as not blowing leaves that have fallen on grassed areas into the street.

- Local Ordinances to Prohibit Blowing of Landscape Waste into Roadways

Project communities without leaf collection programs that require residents to place leaf litter debris in the roadway could enact local ordinances that prohibit the blowing of landscape waste into the roadways. Preventing the disposal of leaf litter and grass clippings in roadways would reduce the potential for TP to be leached from the landscape waste and be transported to the storm sewer system during storm events that happen in between street sweeping operations. Additionally, limiting the amount of landscaped debris in the streets will assist with keeping storm drains clear and reduce the risk of localized flooding.

7. Opportunities for Further Analysis

Several items were identified as activities that could be considered should the DRSCW and LDRWC decide that the resolution of the study needed to be increased. These additional items should be screened based on their cost, impacts on improving the accuracy of the study and how they may influence the conclusions of the Nutrient Implementation Plan (NIP).

- Increase Response Rate to Questionnaire

Out of 95 communities, townships, and agencies who received questionnaires, 55 (58%) responded. A priority would be to obtain answers from those that did not respond. Questionnaires should also be submitted to the 9 communities, townships, and agencies in the DRSCW and LDRWC who were not sent questionnaire during the original data solicitation.

- Collection of Timeline Data of Leaf Litter Collection and Street Sweeping Efforts

While the questionnaire obtained information on the frequency of leaf litter collection and street sweeping by month and land type (i.e., residential, arterial, and commercial), details on the duration of a call out was not collected. Smaller units of government may have limited personnel with the same staff members being responsible for both leaf litter collection and street sweeping. This would create a practical limit on the capability of intensifying efforts at TP critical times of year.

Data on leaf collection and street sweeping call out duration may help calibrate the actual ability of the communities, townships, and agencies to implement such optimization efforts.

- Collect Dry and Wet Mass Data on Street Sweepings

Given the type of data available at the time of this analysis, DRSCW and LDRWC can improve the application of the MPCA Street Sweeping Tool by collecting additional data. Dry and/or wet mass data could be collected from communities to use the better calibrated options of the tool. The dry mass and wet mass options of the MPCA Tool also account for seasonal effects. This would improve the analysis by determining how much extra phosphorus could be collected before fall and/or after leaf collection sweeping. This would allow a comparison of the approximated TP data to future collected data. Verifying that concentrations vary with canopy cover could be built into the study by using the canopy map to ensure that data was collected in both high and low canopy coverage areas.

- Conduct Tree Species Indices

Based on literature review, different tree speciation can leach significantly different amounts of total phosphorus (TP). A study performed in the Twin Cities, MN concluded that the amount of TP varies across tree species. The study determined the TP content of 27 different tree species (Charry, 2016). A survey of tree species could be performed to catalog species planted in the ROW, with the metadata added to the source map. This would help to determine a more precise TP recovery for each community. A tree species index could also provide information to improve or prioritize leaf collection and street sweeping practices.

- Increase Data on Phosphorus Speciation

Phosphorus speciation is also a factor in nutrient removal from stormwater and surface water systems. Specifically, dissolved phosphorus (DP) affects dissolved oxygen levels in surface water. Future studies should include information on DP as a fraction of TP and DP amounts removed during leaf collection and street sweeping.

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DuPage River Salt Creek Workgroup

Lower DuPage River Watershed Coalition

Leaf Litter Collection Survey

General Information

Name of individual filling out survey *

First Name

Last Name

Agency Name *

Email *

example@example.com

Phone Number *

Area Code

Phone Number

1. How many centerline miles are managed under your jurisdiction? *

2. Estimate the percentage of total centerline miles that are curb/gutter? *

- 0%
- 25% (Quarter)
- 33% (Third)
- 50% (Half)
- 66% (Two Thirds)
- 75% (Three Quarters)
- 100%

3. Estimate the percentage of total centerline miles that are CSO (combined sewer overflow)? *

- 0%
- 25% (Quarter)
- 33% (Third)
- 50% (Half)
- 66% (Two Thirds)
- 75% (Three Quarters)
- 100%
- Not sure

Street Sweeping

4. Do you have a street sweeping program? *

- Yes
- No (if no, proceed to Leaf Collection page)

5. Who conducts the street sweeping operations on roads under your jurisdiction? (check all that apply)

- [ ] In house
- [ ] Contractor(s)
- [ ] Other public agency(s) or unit of government
- [ ] Other

6. How many centerline miles are included in street sweeping operations?

7. Estimate the percentage of total centerline miles that are swept that are curb/gutter?

- 0%
- 25% (Quarter)
- 33% (Third)
- 50% (Half)
- 66% (Two Thirds)
- 75% (Three Quarters)
- 100%

8. How many lane miles does each type of equipment sweep in 1 cycle?

	Lane Miles
Regenerative air with mechanical brush sweeper	
Mechanical brush sweeper	
Mechanical brush with vacuum assist	
Other equipment (please describe below)	

8. Other equipment description

9. Do your street sweeping operations change due to the increase of leaf litter in the fall? (If "Yes", please describe below)

- Yes
- No

9. Yes-Description of alterations to operations

10. How does your agency dispose of spoils from street sweeping? (Check all that apply)

- Vactor Station
- Outside Contractor
- Landfill
- Other

11. How many times per month do you sweep streets?
(Fill in table as best describes your schedule)

	January	February	March	April	May	June	July	August	September	October	November	December
Residential Areas												
Arterial Streets												
Commercial/Industrial Areas												
Central Business District												

Leaf Collection

12. Do you have a leaf collection program for residents? *

- Yes
- No (if no, proceed to Catch Basin page)

13. Who conducts the leaf collection operations on roads under your jurisdiction? (check all that apply)

- [ ] In house
- [ ] Contractor(s)
- [ ] Other public agency(s) or unit of government
- [ ] Other

14. How many centerline miles are included in leaf collection operations?

15. What percentage of centerline miles where leaves are collected are curb/gutter?

- 0%
- 25% (Quarter)
- 33% (Third)
- 50% (Half)
- 66% (Two Thirds)
- 75% (Three Quarters)
- 100%

16. Where do you have residents place leaves for pickup?

- Parkway
- Street/Curb

17. How do you have residents place leaves for pickup?

- Directly on ground/street
- In bags/bins

18. How do you alter your leaf collection schedule due to rainfall? (Check all that apply)

- [ ] Schedule proceeds as usual
- [ ] Leaf collection is moved up to before predicted rainfall
- [ ] Leaf collection is delayed to after predicted rainfall

19. Do you usually follow up leaf collection with street sweeping?

- Yes
- No

20. How many times per month do you collect leaves? (Fill in table as best describes your schedule)

	September	October	November	December
Residential Areas				
Arterial Streets				
Commercial/Industrial Areas				
Central Business District				

21. What system do you use to notify people of leaf collection schedules? (Check all that apply)

- [ ] Printed material (newsletter, utility bill, mail)
- [ ] Official website or social media
- [ ] Text messege or phone call
- [ ] We do not notify residents
- [ ] Other

22. Are parked cars notified to move for leaf collection?

- ○ Yes
- ○ No

23. Are obstructed areas revisited for leaf collection?

- ○ Yes
- ○ No

24. Where do you dispose of collected leaves? (Check all that apply)

- [ ] Compost
- [ ] Landfill
- [ ] Other

25. Are residents encouraged/educated on the benefits of mulching/composting their own leaves?

- ○ Yes
- ○ No

Catch Basin Cleanout

26. Estimate how many catch basins you maintain? *

27. Who conducts the catch basin cleanout operations on roads under your jurisdiction? (check all that apply)

- [ ] In house
- [ ] Contractor(s)
- [ ] Other public agency(s) or unit of government
- [ ] Other

28. On average how many catch basins are cleaned per year?

29. How does your agency dispose of spoils from vactoring? (Check all that apply)

- [ ] Vactor Station
- [ ] Outside Contractor
- [ ] Landfill
- [ ] Other

Thank you for taking the time to complete this leaf litter collection survey. Your answers will help us reduce nutrient pollution in our waterways.

If you would like to review your answers, please go back and do so now. After submittal there is no way to alter responses.

If you have any further comments please provide them below.

If you have any further questions, please reach out to Alex Handel via the email below.

(email: ahandel@theconservationfoundation.org)

Final comments:

Type here...

Back

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Agency Name	Simplified Agency Name	1. How many centerline miles are managed under your purview?	2. Estimate the percentage of total centerline miles that are curb/gutter?	3. Estimate the percentage of total centerline miles that drain into combined sewers.	4. Do you have a street sweeping program?	5. Who conducts the street sweeping operations on roads under your purview?	6. How many centerline miles are included in street sweeping operations?	7. Estimate the percentage of total centerline miles that are swept that are curb/gutter?	Regenerative air with mechanical brush sweeper >> Lane Miles	Mechanical brush sweeper >> Lane Miles	Mechanical brush with vacuum assist >> Lane Miles	Other equipment (please describe below) >> Lane Miles
Village of Addison	Addison	96	75% (Three Quarters)	25% (Quarter)	Yes	In house	96	75% (Three Quarters)			96	
Village of Barrington	Barrington	50	66% (Two Thirds)	0%	Yes	In house	50	66% (Two Thirds)			50	
Village of Bartlett	Bartlett	140	100%	0%	Yes	In house	140	100%	70	70		
Village of Bensenville	Bensenville	59	100%	0%	Yes	In house	59	100%		29.5	29.5	
Village of Berkeley	Berkeley	22	100%	0%	Yes	In house	22	100%	22	0	0	0
Village of Bloomingdale	Bloomingdale	172	75% (Three Quarters)	Not sure	Yes	Contractor(s)	125	75% (Three Quarters)			125	
Village of Bolingbrook	Bolingbrook	305	75% (Three Quarters)	0%	Yes	In house	305	100%		305		
Village of Brookfield	Brookfield	57	50% (Half)	66% (Two Thirds)	Yes	In house	57	100%			57	
Village of Carol Stream	Carol Stream	112	100%	0%	Yes	In house Contractor(s)	112	100%	112			
Village of Channahon	Channahon	83	66% (Two Thirds)	0%	Yes	Contractor(s)	83	66% (Two Thirds)		83		
City of Crest Hill	Crest Hill	51	75% (Three Quarters)	0%	Yes	In house	39	100%		39		
Village of Downers Grove	Downers Grove	167	66% (Two Thirds)	0%	Yes	Contractor(s)	120	66% (Two Thirds)	120			
Downers Grove Township Highway Dept	Downers Grove Township	70	50% (Half)	50% (Half)	Yes	In house	35	50% (Half)		35		
Elk Grove Village	Elk Grove Village	128	100%	0%	Yes	In house	128	100%		128		
City of Elmhurst	Elmhurst	150	75% (Three Quarters)	Not sure	Yes	Contractor(s)	115	100%			115	
Village of Elwood	Elwood	38	75% (Three Quarters)	75% (Three Quarters)	Yes	In house	30	75% (Three Quarters)			30	
Village of Frankfort	Frankfort	125	66% (Two Thirds)	0%	Yes	Contractor(s)	100	100%	100			
Village of Glen Ellyn	Glen Ellyn	89	100%	0%	Yes	In house	83	100%		166		
Village of Glendale Heights	Glendale Heights	76	100%	0%	Yes	In house Contractor(s)	72	100%	152			
Village of Hanover Park	Hanover Park	100	75% (Three Quarters)	0%	Yes	In house	100	100%		100		
Village of Hoffman Estates	Hoffman Estates	157	75% (Three Quarters)	0%	Yes	Contractor(s)	160	75% (Three Quarters)	161			
Illinois DOT	Illinois DOT	2700	33% (Third)	0%	Yes	Contractor(s)	2700	33% (Third)		2700		
Village of Itasca	Itasca	43	75% (Three Quarters)	0%	Yes	Contractor(s)	43	75% (Three Quarters)		43		
City of Joliet	Joliet	584	100%	0%	Yes	In house	584	100%		584		
Village of Lisle	Lisle	70	66% (Two Thirds)	0%	Yes	Contractor(s)	45	66% (Two Thirds)			45	
City of Lockport	Lockport	103	75% (Three Quarters)	Not sure	Yes	In house Contractor(s)	103	100%	0	103	0	0
Village of Lombard	Lombard	145	100%	25% (Quarter)	Yes	In house	145	100%		145		
Village of Manhattan	Manhattan	100	75% (Three Quarters)	100%	Yes	Contractor(s)	75	75% (Three Quarters)				
Milton Township Highway Dept.	Milton Township	80	33% (Third)	25% (Quarter)	Yes	In house	25	100%		25		

Simplified Agency Name	9. Other	9. Do your street sweeping operations change due to the increase of leaf litter in the fall?	9. Yes-Description of alterations to operations	10. How does your agency dispose of spoils from street sweeping?	Residential Areas >> January	Residential Areas >> February	Residential Areas >> March	Residential Areas >> April	Residential Areas >> May	Residential Areas >> June	Residential Areas >> July	Residential Areas >> August
Addison	N/A	Yes	Frequency is doubled in the fall. Often we run 1 1/2 or 2 shifts.	Landfill	0	0	2	2	2	2	2	2
Barrington		Yes	We have to sweep 5 days a week to keep the drains functioning.	Outside Contractor Landfill	0	0	0	1	1	1	1	1
Bartlett	Pelican and Crosswind used	Yes	Increase sweeping	Landfill	0	0	0	1	0	1	0	1
Bensenville		Yes	During spring and fall we double up with mechanical brush with vacuum assist machine. Normal cycle is just mechanical brush sweeper	Landfill	0	0	2	1	1	1	1	1
Berkeley	N/A	Yes	We sweep more often	Landfill Hauled by Rainbow Farms for recycling/mulching	0	0	1	1	1	1	1	1
Bloomingdale		Yes	extra sweeps 2 per month	Outside Contractor Landfill	0	0	1	0	1	0	1	1
Bolingbrook		Yes	Heavier loads, dump trucks follow to unload to save time	Landfill	2	0	16	16	16	16	16	16
Brookfield		No		Landfill				4	4	4	4	4
Carol Stream	none	Yes	Two sweeps scheduled to address leaves. May also do in-house if necessarys.	Outside Contractor			1		1	1	1	1
Channahon		No		stockpiled at public works facility			1			1		
Crest Hill		No		Landfill	0	0	0	15	15	10	5	5
Downers Grove		Yes	3 sweeping cycles Oct-Nov	Outside Contractor	0	0	1	2	2	2	2	2
Downers Grove Township		No		Landfill					1			
Elk Grove Village		Yes	Village has an on street leaf collection program and all streets are swept following each leaf collection day	Landfill	0			2	1	1	1	1
Elmhurst		Yes	2 leaf sweep cycles are completed specifically during the fall months	Outside Contractor	0	0	1	1	1	1	1	1
Elwood		No		Landfill					1	1	1	1
Frankfort		No		Outside Contractor					1		1	
Glen Ellyn		Yes	Increased sweeping cycle from 2x per month until leaves are picked up	Landfill	0	0	0	2	2	2	2	2
Glendale Heights		Yes	Increase of Contractual Sweepers	Outside Contractor Landfill				4	4	1		
Hanover Park		Yes	daily to keep up	Outside Contractor			1	1	1	1	1	1
Hoffman Estates		No		Outside Contractor	0	0	0	0	1	0	1	0
Illinois DOT	None	No		Landfill								
Itasca		Yes	Sweep every other week rather than every 3 weeks	Landfill	0	0	1	1	2	1	1	2
Joliet		Yes	Increased frequency of sweeping	Landfill	0	0	.5	.5	.5	.5	.5	.5
Lisle		No		Outside Contractor			1	1	1	1	1	1
Lockport		Yes	Sweep more often	Landfill			1	2	2	1	1	1
Lombard		Yes	Increase frequency	Vactor Station Outside Contractor Landfill			1		1		1	
Manhattan		No		Outside Contractor								
Milton Township		Yes	Only sweep in Fall	Outside Contractor								

Simplified Agency Name	Residential Areas >> September	Residential Areas >> October	Residential Areas >> November	Residential Areas >> December	Arterial Streets >> January	Arterial Streets >> February	Arterial Streets >> March	Arterial Streets >> April	Arterial Streets >> May	Arterial Streets >> June	Arterial Streets >> July	Arterial Streets >> August	Arterial Streets >> September	Arterial Streets >> October	Arterial Streets >> November	Arterial Streets >> December
Addison	2	4	2	0	0	0	2	2	2	2	2	2	2	4	2	0
Barrington	1	3	3	0	0	0	0	1	1	1	1	1	1	3	3	0
Bartlett	0	1	0	0	0	0	0	1	0	1	0	1	0	1	0	0
Bensenville	1	2	2	0	0	0	2	1	1	1	1	1	1	2	2	0
Berkeley	2	3	3	1	0	0	1	1	1	1	1	1	2	3	3	1
Bloomingdale	1	2	2	0	0	0	1	0	1	0	1	1	1	2	2	0
Bolingbrook	16	16	4	4	2	0	16	16	16	16	16	16	16	16	4	4
Brookfield	4	4	4					4	4	4	4	4	4	4	4	
Carol Stream	1	1	1				1		1	1	1	1	1	1	1	
Channahon	1		1				1			1			1		1	
Crest Hill	5	20	20	0	0	0	0	15	15	10	5	5	5	20	20	0
Downers Grove	2	2	2	0	0	0	1	2	2	2	2	2	2	2	2	0
Downers Grove Township			1						1						1	
Elk Grove Village	1	2	2	1	0			1		1		1		1		
Elmhurst	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0
Elwood	1	1	1						1	1	1	1	1	1	1	
Frankfort	1		1						1		1		1		1	
Glen Ellyn	3	4	3	0	0	0	0	2	2	2	2	2	3	4	3	0
Glendale Heights	1	4	4					4	4	1			1	4	4	
Hanover Park	1	4	4				1	1	1	1	1	1	1	4	4	
Hoffman Estates	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1	0
Illinois DOT									1				1			
Itasca	1	2	3	1	0	0	1	1	2	1	1	2	1	2	3	1
Joliet	.5	.5	.5	0	0	0	1	1	1	1	1	1	1	1	1	0
Lisle	1	1	1				1	1	1	1	1	1	1	1	1	
Lockport	1	2	2				1	2	2	1	1	1	1	2	2	
Lombard			1	1			1		1		1				1	1
Manhattan																
Milton Township		2														

Simplified Agency Name	Commercial/Industrial Areas >> January	Commercial/Industrial Areas >> February	Commercial/Industrial Areas >> March	Commercial/Industrial Areas >> April	Commercial/Industrial Areas >> May	Commercial/Industrial Areas >> June	Commercial/Industrial Areas >> July	Commercial/Industrial Areas >> August	Commercial/Industrial Areas >> September	Commercial/Industrial Areas >> October	Commercial/Industrial Areas >> November	Commercial/Industrial Areas >> December	Central Business District >> January
Addison	0	0	2	2	2	2	2	2	2	4	2	0	0
Barrington	0	0	0	1	1	1	1	1	1	3	3	0	0
Bartlett	0	0	0	1	0	1	0	1	0	1	0	0	0
Bensenville	0	0	2	1	1	1	1	1	1	2	2	0	0
Berkeley	0	0	1	1	1	1	1	1	2	3	3	1	0
Bloomingdale	0	0	1	0	1	0	1	1	1	2	2	0	
Bolingbrook	2	0	16	16	16	16	16	16	16	16	4	4	0
Brookfield													
Carol Stream			1		1	1	1	1	1	1	1		
Channahon			1			1			1		1		
Crest Hill	0	0	0	15	15	10	5	5	5	20	20	0	0
Downers Grove	0	0	1	2	2	2	2	2	2	2	2	0	0
Downers Grove Township					1						1		
Elk Grove Village	2	2	2								2	2	
Elmhurst	0	0	1	1	1	1	1	1	1	1	1	0	0
Elwood					1	1	1	1	1	1	1		
Frankfort					1		1		1		1		
Glen Ellyn													0
Glendale Heights				4	4	1			1	4	4		
Hanover Park			1	1	1	1	1	1	1	4	4		
Hoffman Estates	0	0	0	0	1	0	1	0	1	0	1	0	0
Illinois DOT					1				1				
Itasca	0	0	1	1	2	1	1	2	1	2	3	1	0
Joliet	0	0	.5	.5	.5	.5	.5	.5	.5	.5	.5	0	0
Lisle			1	1	1	1	1	1	1	1	1		
Lockport			1	2	2	1	1	1	1	2	2		
Lombard			1		1		1				1	1	
Manhattan													
Milton Township													

Simplified Agency Name	Central Business District >> February	Central Business District >> March	Central Business District >> April	Central Business District >> May	Central Business District >> June	Central Business District >> July	Central Business District >> August	Central Business District >> September	Central Business District >> October	Central Business District >> November	Central Business District >> December	12. Do you have a leaf collection program?	13. Who conducts the leaf collection operations on roads under your jurisdiction?	14. How many centerline miles are included in leaf collection operations?
Addison	0	2	2	2	2	2	2	2	4	2	0	Yes	Contractor(s)	96
Barrington	0	0	4	4	4	4	4	4	4	4	0	Yes (updated)		
Bartlett	0	0	1	0	1	0	1	0	1	0	0	Yes (updated)		
Bensenville	0	2	1	1	1	1	1	1	2	2	0	Yes (updated)		
Berkeley	0	1	1	1	1	1	1	2	3	3	1	Yes	Part of the yard waste removal program with our garbage hauler	22
Bloomingdale												Yes (updated)		
Bolingbrook	0	0	0	0	0	0	0	0	0	0	0	Yes	By Contractor	305
Brookfield			4	4	4	4	4	4	4	4		Yes	In house	57
Carol Stream		1		1	1	1	1	1	1	1		Yes	Garbage hauler	112
Channahon		1			1			1		1		Yes	Contractor(s)	83
Crest Hill	0	0	15	15	10	5	5	5	20	20	0	Yes (updated)		
Downers Grove	0	2	4	4	4	1	2	2	2	2	0	Yes (updated)		
Downers Grove Township										1		No (if no, proceed to Catch Basin page)		
Elk Grove Village												Yes	In house	85
Elmhurst	0	3	5	4	4	5	4	4	4	4	0	Yes	Contractor(s)	100
Elwood				1	1	1	1	1	1	1		Yes (updated)		
Frankfort				2	2	2	2	2	2	2		Yes	In house	125
Glen Ellyn	0	0	8	8	8	8	8	8	8	8	0	Yes	Contractor(s)	89
Glendale Heights												Yes	In house Contractor(s)	76
Hanover Park		1	1	1	1	1	1	1	4	4		Yes (updated)		
Hoffman Estates	0	0	0	1	0	1	0	1	0	1	0	Yes (updated)		
Illinois DOT												No (if no, proceed to Catch Basin page)		
Itasca	0	1	1	2	1	1	2	1	2	3	1	Yes	Contractor(s)	28
Joliet	0	20	20	20	20	20	20	20	20	20	0	Yes (updated)		
Lisle		1	1	1	1	1	1	1	1	1		Yes	In house	70
Lockport		1	2	2	1	1	1	1	2	2		Yes	In house Contractor(s)	103
Lombard		1		1		1				1	1	Yes	Contractor(s)	145
Manhattan												Yes	Contractor(s)	100
Milton Township												No (if no, proceed to Catch Basin page)		

Simplified Agency Name	15. What percentage of centerline miles where leaves are collected are curb/gutter?	16. Where do you have residents place leaves for pickup?	17. How do you have residents place leaves for pickup?	18. How do you alter your leaf collection schedule due to rainfall?	19. Do you usually follow up leaf collection with street sweeping?	Residential Areas >> September	Residential Areas >> October	Residential Areas >> November	Residential Areas >> December	Arterial Streets >> September	Arterial Streets >> October	Arterial Streets >> November
Addison	75% (Three Quarters)	Parkway	In bags/bins	Leaf collection is moved up to before predicted rainfall	No	4	4	4	0	4	4	4
Barrington			In bags/bins									
Bartlett			In bags/bins									
Bensenville			In bags/bins									
Berkeley	100%	Parkway	In bags/bins	Schedule proceeds as usual	No	4	4	4	0	4	4	4
Bloomingdale			In bags/bins									
Bolingbrook	100%	Parkway	In bags/bins	Schedule proceeds as usual	No	every pickup day from a[ril-dec (once a week)						
Brookfield	100%	Parkway	Directly on ground/street	Schedule proceeds as usual	Yes			4				4
Carol Stream	100%	Parkway	In bags/bins	Schedule proceeds as usual	No			1	1			
Channahon	66% (Two Thirds)	Street/Curb	In bags/bins	Schedule proceeds as usual	No	4	4	4	4			
Crest Hill			In bags/bins									
Downers Grove			In bags/bins									
Downers Grove Township												
Elk Grove Village	100%	Street/Curb	Directly on ground/street	Schedule proceeds as usual	Yes		20	20	5		20	20
Elmhurst	75% (Three Quarters)	Parkway	In bags/bins	Schedule proceeds as usual	No			1	1			
Elwood			In bags/bins									
Frankfort	66% (Two Thirds)	Parkway	Directly on ground/street	Schedule proceeds as usual	Yes		3	4	1		3	4
Glen Ellyn	100%	Parkway	In bags/bins	Schedule proceeds as usual	Yes	4	4	4	0	4	4	4
Glendale Heights	100%	Parkway	In bags/bins	Schedule proceeds as usual	Yes	1	4	4		1	4	4
Hanover Park			In bags/bins									
Hoffman Estates			In bags/bins									
Illinois DOT												
Itasca	75% (Three Quarters)	Street/Curb	In bags/bins	Schedule proceeds as usual	Yes	4	4	5	0	4	4	5
Joliet			In bags/bins									
Lisle	66% (Two Thirds)	Parkway	Directly on ground/street	Schedule proceeds as usual	Yes		2	3				
Lockport	75% (Three Quarters)	Parkway	Directly on ground/street	Schedule proceeds as usual	Yes	0	4	4	2	0	4	4
Lombard	100%	Parkway	In bags/bins	Leaf collection is moved up to before predicted rainfall	Yes			4	2			
Manhattan	75% (Three Quarters)	Parkway	In bags/bins	Schedule proceeds as usual		4	4	2		4	4	2
Milton Township												

Simplified Agency Name	Arterial Streets >> December	Commercial/Industrial Areas >> September	Commercial/Industrial Areas >> October	Commercial/Industrial Areas >> November	Commercial/Industrial Areas >> December	Central Business District >> September	Central Business District >> October	Central Business District >> November	Central Business District >> December	21. What system do you use to notify people of leaf collection schedules?	22 Are parked cars notified to move for leaf collection?	23. Are obstructed areas revisited for leaf collection?
Addison	0	0	0	0	0	0	0	0	0	Printed material (newsletter, utility bill, mail) Official website or social media	No	No
Barrington												
Bartlett												
Bensenville												
Berkeley	0	4	4	4	0	4	4	4	0	Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Bloomingdale												
Bolingbrook										We do not notify residents	No	Yes
Brookfield										Official website or social media	Yes	Yes
Carol Stream										Printed material (newsletter, utility bill, mail) Official website or social media	No	No
Channahon										Printed material (newsletter, utility bill, mail) Official website or social media	No	No
Crest Hill												
Downers Grove												
Downers Grove Township												
Elk Grove Village	5									Printed material (newsletter, utility bill, mail) Official website or social media	Yes	Yes
Elmhurst										Printed material (newsletter, utility bill, mail) Official website or social media	No	No
Elwood												
Frankfort	1		3	4	1		3	4	1	Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Glen Ellyn	0									Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Glendale Heights		1	4	4						Printed material (newsletter, utility bill, mail)	Yes	Yes
Hanover Park												
Hoffman Estates												
Illinois DOT												
Itasca	0	0	0	0	0	0	0	0	0	Official website or social media	No	No
Joliet												
Lisle										Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Lockport	2	0	4	4	2	0	4	4	2	Official website or social media	No	Yes
Lombard										Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Manhattan						4	4	2		Printed material (newsletter, utility bill, mail)	No	No
Milton Township												

Simplified Agency Name	24. Where do you dispose of collected leaves?	25. Are residents encouraged to mulch/compost leaves?	26. Estimate how many catch basins you maintain?	27. Who conducts the catch basin cleanout operations on roads under your jurisdiction?	28. On average how many catch basins are cleaned per year?	29. How does your agency dispose of spoils from vactoring and sweeping?	Final comments:
Addison	Landfill	No	2400	In house	600	Landfill	25% of storm catch basins are cleaned every year, however, 100% of the 160 catch basins in the combined sewer area are cleaned annually.
Barrington			1000	In house Contractor(s)	150	Outside Contractor Landfill	
Bartlett			2500	In house	350	Landfill	
Bensenville			3200	In house	3200	Landfill	
Berkeley	Landfill	No	550	In house	0	Landfill	
Bloomingdale			1345	In house	270	Outside Contractor Landfill	
Bolingbrook	Landfill	Yes	4000	In house	2500	Landfill	
Brookfield	Landfill	Yes	2600	In house	200	Landfill	
Carol Stream	Landfill	Yes	3829	In house	300	Outside Contractor	
Channahon	Compost	No	3839	In house Contractor(s)	20	Outside Contractor	
Crest Hill			1115	In house	150	Landfill	
Downers Grove			718	In house Contractor(s)	179	Outside Contractor	
Downers Grove Township			820	In house Other public agency(s) or unit of government	40	Outside Contractor Landfill	
Elk Grove Village	Landfill	Yes	7000	In house	50	Vactor Station	
Elmhurst	Compost Landfill	Yes	4300	Contractor(s)	850	Outside Contractor	
Elwood			150	In house	1	Landfill	
Frankfort	Compost	No	2765	In house		Outside Contractor	
Glen Ellyn	Compost	Yes	3200	In house	750	Landfill	There are just over 6 miles of streets in the Village that are not improved (curb & gutter) so choose answers for percentages based on closest number. The Village does not have a commercial/industrial area outside of the Central Business District Leaf pickup is by sticker program, through contracted waste hauler, performed weekly until end of November
Glendale Heights	Landfill	No	1500	In house	100	Outside Contractor Landfill	
Hanover Park			5415	In house	1500	Outside Contractor	
Hoffman Estates			4200	In house	200	Landfill	
Illinois DOT			15000	In house	3000	Landfill	
Itasca	Landfill	Yes	1092	In house	218	Vactor Station	
Joliet			10000	In house	300	Landfill	
Lisle	Farm Field	Yes	2900	In house	350	Vactor Station	
Lockport	Compost	No	2115	In house	150	Landfill	
Lombard	Compost	Yes	6164	In house Contractor(s)	1541	Vactor Station Outside Contractor Landfill	
Manhattan	Landfill	Yes	200	In house	200	Outside Contractor	
Milton Township			125	In house	12	Outside Contractor	

Agency Name	Simplified Agency Name	1. How many centerline miles are managed under your purview?	2. Estimate the percentage of total centerline miles that are curb/gutter?	3. Estimate the percentage of total centerline miles that drain into combined sewers.	4. Do you have a street sweeping program?	5. Who conducts the street sweeping operations on roads under your purview?	6. How many centerline miles are included in street sweeping operations?	7. Estimate the percentage of total centerline miles that are swept that are curb/gutter?	Regenerative air with mechanical brush sweeper >> Lane Miles	Mechanical brush sweeper >> Lane Miles	Mechanical brush with vacuum assist >> Lane Miles	Other equipment (please describe below) >> Lane Miles
Village of Minooka	Minooka	63	75% (Three Quarters)	0%	Yes	Contractor(s)	63	75% (Three Quarters)			63	
Village of Mokena	Mokena	110	75% (Three Quarters)	0%	No (if no, proceed to Leaf Collection page)	In house Contractor(s)	110	75% (Three Quarters)				
City of Naperville	Naperville	431	75% (Three Quarters)	0%	Yes	In house, Contractor(s)	400	100%	400			
Naperville Township	Naperville Township	17	50% (Half)	50% (Half)	Yes	Contractor(s)	8	50% (Half)		8	8	0
Village of New Lenox	New Lenox	130.25	75% (Three Quarters)	0%	Yes	In house	130.25	75% (Three Quarters)	130.25			
North Riverside	North Riverside	33	100%	100%	Yes	In house	33	100%		33		
Village of Oak Brook	Oak Brook	55	66% (Two Thirds)	0%	Yes	In house Contractor(s)	55	66% (Two Thirds)	55			
City of Oakbrook Terrace	Oakbrook Terrace	73	50% (Half)	0%	Yes	Contractor(s)	73	100%		73		
Village of Orland Park	Orland Park	216.3	75% (Three Quarters)	0%	Yes	Contractor(s)	40	100%		40		
Village of Palatine	Palatine	156	75% (Three Quarters)	0%	Yes	In house	156	75% (Three Quarters)		156		
Village of Plainfield	Plainfield	208	75% (Three Quarters)	75% (Three Quarters)	Yes	In house	196	75% (Three Quarters)	99	99		
Village of Romeoville	Romeoville	135	100%	0%	Yes	In house	135	100%		135		
Village of Roselle	Roselle	75	75% (Three Quarters)	0%	Yes	Contractor(s)	75	75% (Three Quarters)	75	0	0	0
Village of Schaumburg	Schaumburg	219	75% (Three Quarters)	Not sure	Yes	In house Contractor(s)	219	75% (Three Quarters)	219			
Village of Shorewood	Shorewood	80	75% (Three Quarters)	0%	Yes	In house	60	100%			120	
Village of Streamwood	Streamwood	96	100%	0%	Yes	In house Contractor(s)	96	100%	96			
City of Warrenville	Warrenville	53	50% (Half)	0%	Yes	In house	28	100%		28		
Wayne Township Road District	Wayne Township	32	0%	0%	No (if no, proceed to Leaf Collection page)							
City of West Chicago	West Chicago	100	75% (Three Quarters)	0%	Yes	In house	90	100%	90			
Village of Western Springs	Western Springs	97	100%	50% (Half)	Yes	Contractor(s)	97	100%	0	0	97	0
City of Wheaton	Wheaton	167	75% (Three Quarters)	0%	Yes	In house	167	75% (Three Quarters)		83.5	83.5	
Village of Winfield	Winfield	32	50% (Half)	0%	Yes	Contractor(s)	16	100%			32	
Winfield Township Road District	Winfield Township	41	0%	Not sure	No (if no, proceed to Leaf Collection page)							
City of Wood Dale	Wood Dale	48	75% (Three Quarters)	0%	Yes	Contractor(s)	48	75% (Three Quarters)			48	
Village of Woodridge	Woodridge	195	100%	0%	Yes	Contractor(s)	195	100%			195	
York Township Highway Department	York Township	34	33% (Third)	0%	No (if no, proceed to Leaf Collection page)							

Simplified Agency Name	9. Other	9. Do your street sweeping operations change due to the increase of leaf litter in the fall?	9. Yes-Description of alterations to operations	10. How does your agency dispose of spoils from street sweeping?	Residential Areas >> January	Residential Areas >> February	Residential Areas >> March	Residential Areas >> April	Residential Areas >> May	Residential Areas >> June	Residential Areas >> July	Residential Areas >> August
Minooka		No		Landfill				1		1		1
Mokena		No		Outside Contractor								
Naperville		No		Outside Contractor				1				
Naperville Township		No		Outside Contractor	0			1				
New Lenox		Yes	Additional time spent sweeping areas with mature trees.	Outside Contractor			1	1	1	1	1	1
North Riverside		Yes	dump truck goes with sweeper	Outside Contractor			4	4	4	4	4	4
Oak Brook		No		Outside Contractor					1	1	1	1
Oakbrook Terrace		No		Outside Contractor			1		1		1	
Orland Park		No		Outside Contractor								
Palatine	None	Yes	Frequency increases to every other week in the fall	Outside Contractor Landfill			1		1		1	
Plainfield		No		Outside Contractor Landfill			1				1	1
Romeoville		Yes	additional sweeping	Landfill		1		1		1		1
Roselle		No		Outside Contractor	0	0	1	1	1	1	1	2
Schaumburg	none	Yes	There are two fall sweeping cycles due to natural leaf drop on village roadways.	Landfill			1				1	
Shorewood		Yes	Depending on leaf volume, we will shift to daily sweeping operations.	Landfill	0	0	4	4	4	4	4	4
Streamwood		Yes	More sweeping	Outside Contractor			1		1		1	1
Warrenville		Yes	Increase frequency	Landfill	0	0	0	1	1	1	1	1
Wayne Township												
West Chicago		Yes	one additional sweeper, manpower	Outside Contractor Landfill Fall leaves composted	0	0	17	15	15			
Western Springs		No		Outside Contractor					1	1	1	1
Wheaton		Yes	Increased frequency	Outside Contractor Landfill	1	1	1	1	1	1	1	1
Winfield	none	No	N/A	Landfill					1			
Winfield Township												
Wood Dale		Yes	Additional sweepings	Outside Contractor	0	0	0	2	1	1	1	1
Woodridge		Yes	additional Village wide sweeps are completed in the fall to remove leaves	Outside Contractor					1		1	
York Township												

Simplified Agency Name	Residential Areas >> September	Residential Areas >> October	Residential Areas >> November	Residential Areas >> December	Arterial Streets >> January	Arterial Streets >> February	Arterial Streets >> March	Arterial Streets >> April	Arterial Streets >> May	Arterial Streets >> June	Arterial Streets >> July	Arterial Streets >> August	Arterial Streets >> September	Arterial Streets >> October	Arterial Streets >> November	Arterial Streets >> December
Minooka		1		1				1		1		1		1		1
Mokena																
Naperville			1					1							1	
Naperville Township	1				0			1					1			
New Lenox	1	2	3				1	1	1	1	1	1	1	2	3	
North Riverside	4	4	4	2			4	4	4	4	4	4	4	4	4	2
Oak Brook	1	1							1	1	1	1	1	1		
Oakbrook Terrace			1				1		1		1				1	
Orland Park							1		1		1		1			
Palatine	1	2	2				1		1		1		1	2	2	
Plainfield			1					1		1		1		1		
Romeoville		1	1				1		1		1		1		1	
Roselle	2	2	2	0	0	0	1	1	1	1	1	2	2	2	2	0
Schaumburg		1	1				1				1			1	1	
Shorewood	4	20	20	0	0	0	4	4	4	4	4	4	4	20	20	0
Streamwood	1	1					1		1		1	1	1	1		
Warrenville	2	2	2	0	0	0	0	1	1	1	1	1	2	2	2	0
Wayne Township																
West Chicago					0	0	0									
Western Springs	1								1	1	1	1	1			
Wheaton	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Winfield									1							
Winfield Township																
Wood Dale	1	2	2	1	0	0	0	2	1	1	1	1	1	2	2	1
Woodridge		1	2						1		1			1	2	
York Township																

Simplified Agency Name	Commercial/Industrial Areas >> January	Commercial/Industrial Areas >> February	Commercial/Industrial Areas >> March	Commercial/Industrial Areas >> April	Commercial/Industrial Areas >> May	Commercial/Industrial Areas >> June	Commercial/Industrial Areas >> July	Commercial/Industrial Areas >> August	Commercial/Industrial Areas >> September	Commercial/Industrial Areas >> October	Commercial/Industrial Areas >> November	Commercial/Industrial Areas >> December	Central Business District >> January
Minooka				1		1		1		1		1	
Mokena													
Naperville													
Naperville Township	0												0
New Lenox			1	1	1	1	1	1	1	2	3		
North Riverside			4	4	4	4	4	4	4	4	4	2	
Oak Brook					2	2	2	2	2	2			
Oakbrook Terrace			1		1		1				1		
Orland Park													
Palatine			1		1		1		1	2	2		
Plainfield													
Romeoville			1		1		1		1		1		
Roselle	0	0	1	1	1	1	1	2	2	2	2	0	0
Schaumburg			1				1						
Shorewood	0	0	4	4	4	4	4	4	4	20	20	0	0
Streamwood			1		1		1	1	1	1			
Warrenville	0	0	0	1	1	1	1	1	2	2	2	0	0
Wayne Township													
West Chicago	0	0	0										0
Western Springs					1	1	1	1	1				
Wheaton	1	1	1	1	1	1	1	1	1	1	1	1	4
Winfield					1								
Winfield Township													
Wood Dale	0	0	0	2	1	1	1	1	1	2	2	1	0
Woodridge					1		1			1	2		
York Township													

Simplified Agency Name	Central Business District >> February	Central Business District >> March	Central Business District >> April	Central Business District >> May	Central Business District >> June	Central Business District >> July	Central Business District >> August	Central Business District >> September	Central Business District >> October	Central Business District >> November	Central Business District >> December	12. Do you have a leaf collection program?	13. Who conducts the leaf collection operations on roads under your jurisdiction?	15. How many centerline miles are included in leaf collection operations?
Minooka			1		1		1		1		1	Yes (updated)		
Mokena												Yes	In house Contractor(s)	110
Naperville		4	4	4	4	4	4	4	4			Yes	In house	375
Naperville Township												Yes	In house	17
New Lenox		1	1	1	1	1	1	1	2	3		Yes	In house	130.25
North Riverside		4	4	4	4	4	4	4	4	4	2	Yes (updated)		
Oak Brook												Yes	In house	55
Oakbrook Terrace		1		1		1				1		Yes	Contractor(s)	73
Orland Park		1		1		1		1				Yes	Waste Management has containers that provided to residents to fill.	216
Palatine		1		1		1		1	2	2		Yes	In house	156
Plainfield		1	1	1	1	1	1	1	1	1		Yes (updated)		
Romeoville												Yes (updated)		
Roselle	0	1	1	1	1	1	2	2	2	2	0	Yes (updated)		
Schaumburg		1				1						Yes (updated)		0
Shorewood	0	0	0	0	0	0	0	0	0	0	0	Yes	In house	80
Streamwood		1		1		1	1	1	1			Yes	Contractor(s)	96
Warrenville	0	0	1	1	1	1	1	2	2	2	0	Yes (updated)		
Wayne Township												No (if no, proceed to Catch Basin page)		
West Chicago	0	0										Yes	Waste and Recycling contractor collects residential leaves placed in craft bags on their normal collection day.	80
Western Springs				1	1	1	1	1				Yes	In house	97
Wheaton	4	4	4	4	4	4	4	4	4	4	4	Yes (updated)		
Winfield				1								Yes	Contractor(s)	32
Winfield Township												Yes	Contractor(s)	50
Wood Dale	0	0	2	1	1	1	1	1	2	2	1	Yes	Contractor(s)	48
Woodridge				1		1			1	2		Yes	Contractor(s)	195
York Township												No (if no, proceed to Catch Basin page)		

Simplified Agency Name	15. What percentage of centerline miles where leaves are collected are curb/gutter?	16. Where do you have residents place leaves for pickup?	17. How do you have residents place leaves for pickup?	18. How do you alter your leaf collection schedule due to rainfall?	19. Do you usually follow up leaf collection with street sweeping?	Residential Areas >> September	Residential Areas >> October	Residential Areas >> November	Residential Areas >> December	Arterial Streets >> September	Arterial Streets >> October	Arterial Streets >> November
Minooka			In bags/bins									
Mokena	75% (Three Quarters)	Parkway	In bags/bins	Schedule proceeds as usual Leaf collection is delayed to after predicted rainfall	No							
Naperville	100%	Street/Curb	Directly on ground/street	Schedule proceeds as usual	Yes							
Naperville Township	50% (Half)	Parkway	Directly on ground/street	Schedule proceeds as usual	No		2	4	1		2	4
New Lenox	75% (Three Quarters)	Parkway	Directly on ground/street	Schedule proceeds as usual	Yes	0	6	4	1	0	6	4
North Riverside	100%		In bags/bins									
Oak Brook	66% (Two Thirds)	Parkway	Directly on ground/street	Schedule proceeds as usual	Yes		1	1	1		1	1
Oakbrook Terrace	50% (Half)	Parkway	In bags/bins	Schedule proceeds as usual	No	4	4	4	2	4	4	4
Orland Park	75% (Three Quarters)	Street/Curb	In bags/bins	Schedule proceeds as usual	No	4	4	4	4	4	4	4
Palatine	75% (Three Quarters)	Street/Curb	Directly on ground/street	Schedule proceeds as usual	Yes	1	2	2		1	2	2
Plainfield			In bags/bins									
Romeoville			In bags/bins									
Roselle			In bags/bins									
Schaumburg			In bags/bins									
Shorewood	75% (Three Quarters)	Parkway	Directly on ground/street	Leaf collection is delayed to after predicted rainfall	Yes	0	20	20	0	0	0	0
Streamwood	100%	Street/Curb	In bags/bins	Schedule proceeds as usual	No	1	1	1		1	1	1
Warrenville			In bags/bins									
Wayne Township												
West Chicago	75% (Three Quarters)	Parkway	In bags/bins	Schedule proceeds as usual	No		5	20				
Western Springs	100%	Street/Curb	Directly on ground/street	Schedule proceeds as usual	No	0	3	4	1	0	3	4
Wheaton			In bags/bins									
Winfield	50% (Half)	Parkway	In bags/bins	Schedule proceeds as usual	No			3				3
Winfield Township	0%	Parkway	Directly on ground/street	Schedule proceeds as usual	No			1				
Wood Dale	75% (Three Quarters)	Parkway	In bags/bins	Schedule proceeds as usual	No	4	4	4	0	4	4	4
Woodridge	100%	Parkway	In bags/bins	Schedule proceeds as usual	Yes			4				4
York Township	0%											

Simplified Agency Name	Arterial Streets >> December	Commercial/Industrial Areas >> September	Commercial/Industrial Areas >> October	Commercial/Industrial Areas >> November	Commercial/Industrial Areas >> December	Central Business District >> September	Central Business District >> October	Central Business District >> November	Central Business District >> December	21. What system do you use to notify people of leaf collection schedules?	22 Are parked cars notified to move for leaf collection?	23. Are obstructed areas revisited for leaf collection?
Minooka												
Mokena										Printed material (newsletter, utility bill, mail) Official website or social media	Yes	Yes
Naperville										Printed material (newsletter, utility bill, mail), Official website or social media	No	Yes
Naperville Township	1									Printed material (newsletter, utility bill, mail) Official website or social media	Yes	Yes
New Lenox	1	0	6	4	1	0	0	0	0	Printed material (newsletter, utility bill, mail) Official website or social media		Yes
North Riverside												
Oak Brook	1		1	1	1					Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Oakbrook Terrace	2	4	4	4	2	4	4	4	2	Printed material (newsletter, utility bill, mail) Official website or social media	No	No
Orland Park	4	4	4	4	4	4	4	4	4	Printed material (newsletter, utility bill, mail) Official website or social media Waste Management Information	No	No
Palatine		0	0	0		0	0	0		Printed material (newsletter, utility bill, mail) Official website or social media	Yes	Yes
Plainfield												
Romeoville												
Roselle												
Schaumburg												
Shorewood	0	0	0	0	0	0	0	0	0	Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Streamwood		1	1	1		1	1	1		Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Warrenville												
Wayne Township												
West Chicago										Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Western Springs	1	0	3	4	1	0	3	4	1	Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Wheaton												
Winfield				0				0		Printed material (newsletter, utility bill, mail) Official website or social media	No	No
Winfield Township										Printed material (newsletter, utility bill, mail) Official website or social media signs posted at each entrance to neighbor hoods	No	No
Wood Dale	0	0	0	0	0	0	0	0	0	Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
Woodridge										Printed material (newsletter, utility bill, mail) Official website or social media	No	Yes
York Township												

Simplified Agency Name	28. Where do you dispose of collected leaves?	25. Are residents encouraged to mulch/compost leaves?	26. Estimate how many catch basins you maintain?	27. Who conducts the catch basin cleanout operations on roads under your jurisdiction?	28. On average how many catch basins are cleaned per year?	29. How does your agency dispose of spoils from vactoring and sweeping?	Final comments:
Minooka			2300	In house Contractor(s)	25	Landfill	
Mokena	Landfill	Yes	10000	In house Contractor(s)	100	Outside Contractor	
Naperville	Contractor hauls to fields	Yes	7263	In house	5000	Landfill	
Naperville Township	Compost Landfill	Yes	319	ublic agency(s) or unit of gove	319	Outside Contractor	
New Lenox	Compost	Yes	3130	In house	750	Outside Contractor Landfill	Leaf pick-up program runs continuously during October and November, with a final clean-up in December. One unit can do the entire Village multiple times per week early in the season, while two trucks are needed (with OT hours usually worked) to complete the Village once a week. The Street Sweeper cleans the entire Village once a month, then runs almost continuously in October and November. When weather allows, sweeping will start in March and finish in December.
North Riverside			350	Contractor(s)	100	Outside Contractor	In regards to leaf collection. We do not allow residents to stockpile leaves in the street. They are responsible to bag them and use yard waste collection to dispose. Many dump their yard waste containers at Public Works in the stockpile area. The pile is off loaded by an outside contractor to a landfill.
Oak Brook	Contractor handles disposa	Yes	450	Contractor(s)	150	Outside Contractor	
Oakbrook Terrace	Landfill	Yes	400	In house	400	Landfill	
Orland Park	ent disposes with other lan	Yes	350	In house	350	Outside Contractor	Our sweeping is only a specific list of main streets as well as certain Village parking lots and metra lots. Leaf collection is completely by Waste Management.
Palatine	Compost	Yes	3000	In house	500	Landfill	
Plainfield			1600	In house Contractor(s)	100	Landfill	
Romeoville			9000	In house	200	Landfill	
Roselle			1785	In house Contractor(s)	50	Outside Contractor	
Schaumburg			2222	In house	556	Vactor Station	
Shorewood	Compost	Yes	3000	In house	250	Landfill	
Streamwood	Landfill	Yes	500	Contractor(s)	50	Outside Contractor	
Warrenville			500	In house	25	Landfill	My estimate of 500 catch basins is truly an estimate. We are slowly getting better data in our GIS, but it is a work in progress.
Wayne Township			580	In house	580	no vactoring	
West Chicago	Compost	No	500	In house	50	Landfill	
Western Springs	Compost	Yes	2066	In house	50	Landfill	
Wheaton			5247	In house	1987	Vactor Station Landfill	All streets get swept at least once per month. Downtown gets swept once per week.
Winfield	Contractor handles disposa	No	1000	In house Contractor(s)	50	Outside Contractor	
Winfield Township	actor responsibility to dispo	Yes	100	In house Other public agency(s) or unit of government	30	Vactor Station	
Wood Dale	Removed by contractor	No	1000	In house	100	Vactor Station	
Woodridge	Contractor handles disposa	Yes	4000	In house Contractor(s)	150	Vactor Station	
York Township			380	In house	40	Dumpster	

Appendix C Questionnaire Status

Community/Township/Agency	Survey Status
Addison	Responded
Addison Township	Did Not Respond
Arlington Heights	Did Not Respond
Barrington	Responded
Bartlett	Responded
Bellwood	Did Not Respond
Bensenville	Responded
Berkeley	Responded
Bloomingdale	Responded
Bloomingdale Township	Did Not Respond
Bolingbrook	Responded
Broadview	Did Not Respond
Brookfield	Responded
Burr Ridge	Did Not Respond
Carol Stream	Responded
Channahon	Responded
Clarendon Hills	Did Not Respond
Crest Hill	Responded
Darien	Did Not Respond
Downers Grove	Responded
Downers Grove Township	Responded
Elk Grove Village	Responded
Elmhurst	Responded
Elwood	Responded
Frankfort	Responded
Frankfort Township	Did Not Respond
Glen Ellyn	Responded
Glendale Heights	Responded
Hanover Park	Responded
Hillside	Did Not Respond
Hinsdale	Did Not Respond
Hoffman Estates	Responded
Homer Glen	Did Not Respond
Illinois DOT	Responded
Inverness	Did Not Respond
Itasca	Responded
Jackson Township	Did Not Respond
Joliet	Responded
Joliet Township	Did Not Respond
La Grange	Did Not Respond
La Grange Park	Did Not Respond
Lemont	Did Not Respond

Appendix C Questionnaire Status

Community/Township/Agency	Survey Status
Lisle	Responded
Lisle Township	Did Not Respond
Lockport	Responded
Lockport Township	Did Not Respond
Lombard	Responded
Manhattan	Responded
Manhattan Township	Did Not Respond
Melrose Park	Did Not Respond
Milton Township	Responded
Minooka	Responded
Mokena	Responded
Naperville	Responded
Naperville Township	Responded
New Lenox	Responded
New Lenox Township	Did Not Respond
North Riverside	Responded
Northlake	Did Not Respond
Oak Brook	Responded
Oakbrook Terrace	Responded
Orland Hills	Did Not Respond
Orland Park	Responded
Palatine	Responded
Palos Park	Did Not Respond
Plainfield	Responded
Plainfield Township	Did Not Respond
Rockdale	Did Not Respond
Rolling Meadows	Did Not Respond
Romeoville	Responded
Roselle	Responded
Schaumburg	Responded
Shorewood	Responded
South Barrington	Did Not Respond
Stone Park	Did Not Respond
Streamwood	Responded
Tinley Park	Did Not Respond
Villa Park	Did Not Respond
Warrenville	Responded
Wayne	Did Not Respond
Wayne Township	Responded
West Chicago	Responded
Westchester	Did Not Respond
Western Springs	Responded

Appendix C Questionnaire Status

Community/Township/Agency	Survey Status
Westmont	Did Not Respond
Wheaton	Responded
Winfield	Responded
Winfield Township	Responded
Wood Dale	Responded
Woodridge	Responded
York Township	Responded

Appendix D Leaf Litter Mass Data

Location	Year	Cu. Yds.	lbs	g	ug TP	kg TP	lb TP
Elk Grove Village	2010	10254	3501741	1588389718	85773044750	85.77	188.93
	2011	14108	4817882	2185391275	1.18011E+11	118.01	259.94
	2012	6679	2280879	1034606488	55868750330	55.87	123.06
	2013	9513	3248690	1473605557	79574700089	79.57	175.27
	2014	7896	2696484	1223125142	66048757690	66.05	145.48
	2015	6726	2296929	1041886994	56261897698	56.26	123.92
	2016	6300	2151450	975897720	52698476880	52.70	116.08
	2017	6726	2296929	1041886994	56261897698	56.26	123.92
	2018	5696	1945184	882335462.4	47646114970	47.65	104.95
	2019	5785	1975578	896121954	48390585516	48.39	106.59
	2020	5376	1835904	832766054.4	44969366938	44.97	99.05
Lisle	1999	2,091	714077	323905100.4	17490875422	17.49	38.53
	2000	2,792	953468	432493084.8	23354626579	23.35	51.44
	2001	3,240	1106460	501890256	27102073824	27.10	59.70
	2002	4,740	1618710	734246856	39649330224	39.65	87.33
	2003	5,010	1710915	776071044	41907836376	41.91	92.31
	2004	4,440	1516260	687775536	37139878944	37.14	81.81
	2005	4,545	1552118	704040498	38018186892	38.02	83.74
	2006	4,365	1490648	676157706	36512516124	36.51	80.42
	2007	2,715	927173	420565446	22710534084	22.71	50.02
	2008	5,718	1952697	885743359.2	47830141397	47.83	105.35
	2009	6,360	2171940	985191984	53200367136	53.20	117.18
	2010	5,730	1956795	887602212	47930519448	47.93	105.57
	2011	6,255	2136083	968927022	52322059188	52.32	115.25
	2012	5,355	1828733	829513062	44793705348	44.79	98.66
	2013	6,075	2074613	941044230	50816388420	50.82	111.93
	2014	6,698	2287367	1037549671	56027682245	56.03	123.41
	2015	6015	2054123	931749966	50314498164	50.31	110.82
	2016	5170	1765555	800855748	43246210392	43.25	95.26
	2017	2550	870825	395006220	21330335880	21.33	46.98
	2018	4230	1444545	655245612	35383263048	35.38	77.94
	2019	5880	2008020	910837872	49185245088	49.19	108.34
	2020	5880	2008020	910837872	49185245088	49.19	108.34
Addison	2109	1,653	564500	256056973.2	13827076553	13.83	30.46
	2020	1,016	346964	157382870.4	8498675002	8.50	18.72
Streamwood		tons					
	2020	97	19400	8799840	475191360	0.48	1.05
West Chicago	2010	510	174165	79001244	4266067176	4.27	9.40
	2011	360	122940	55765584	3011341536	3.01	6.63
	2012	360	122940	55765584	3011341536	3.01	6.63
	2013	540	184410	83648376	4517012304	4.52	9.95
	2014	360	122940	55765584	3011341536	3.01	6.63
	2015	330	112695	51118452	2760396408	2.76	6.08
	2016	480	163920	74354112	4015122048	4.02	8.84
	2017	510	174165	79001244	4266067176	4.27	9.40
	2018	540	184410	83648376	4517012304	4.52	9.95
	2019	480	163920	74354112	4015122048	4.02	8.84
	2020	510	174165	79001244	4266067176	4.27	9.40

Appendix D Leaf Litter Mass Data

Location	Year	Cu. Yds.	lbs	g	ug TP	kg TP	lb TP
Lockport	2020	1800	614700	278827920	15056707680	15.06	33.16
Glen Ellyn	2020	700	239050	108433080	5855386320	5.86	12.90
	2019	1,000	341500	154904400	8364837600	8.36	18.42
	2018	900	307350	139413960	7528353840	7.53	16.58
	2017	800	273200	123923520	6691870080	6.69	14.74
	2016	900	307350	139413960	7528353840	7.53	16.58
	2015	630	215145	97589772	5269847688	5.27	11.61
	2014	540	184410	83648376	4517012304	4.52	9.95
New Lenox	Spring 2021	30	10245	4647132	250945128	0.25	
	Fall 2020	2500	853750	387261000	20912094000	20.91	
	Spring 2020	30	10245	4647132	250945128	0.25	
					Total 2020	21.16	46.61
	Fall 2019	2920	997180	452320848	24425325792	24.43	
	Spring 2019	40	13660	6196176	334593504	0.33	
					Total 2019	24.76	54.54
	Fall 2018	2915	995473	451546326	24383501604	24.38	
	Spring 2018	40	13660	6196176	334593504	0.33	
					Total 2018	24.72	54.45

Appendix D Leaf Litter Mass Data

MN leaves	300-383	lbs/cuyd	used thisto be consistant with MN data - from epa
average	342	lbs/cuyd	conversion tables
	454	g/lb	
	54	ug TP/g leaves	used value for whole oak leaves

In 2020

Community	lbs of Leaves	lb of TP
Elk Grove Village	1835904	99.05
Lisle	2008020	108.34
Addison	346964	18.72
Streamwood	19400	1.05
West Chicago	174165	9.40
Lockport	614700	33.16
Glen Ellyn	239050	12.90
New Lenox	863995	46.61

Addison

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	2,630	0	0%
Commercial	427,785	18,907	4%
Industrial	847,573	45,938	5%
Institutional	151,188	15,375	10%
Open Space	538,484	74,856	14%
Other	294,621	25,732	9%
Residential	2,757,671	830,226	30%
Trans/Comm/Util	195,925	7,529	4%
TOTAL	**5,215,877**	**1,018,564**	**20%**

Arlington Heights

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Commercial	145,305	18,940	13%
Industrial	2,675	16	1%
Institutional	6,533	324	5%
Open Space	24,294	5,866	24%
Residential	231,084	118,894	51%
Transprotation/Utilities	42,277	777	2%
Other	9,561	1,424	15%
Total	461,729	146,241	32%

Aurora

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	97,668	3,478	4%
Commercial	77,473	1,259	2%
Industrial	80,489	841	1%
Institutional	52,178	808	2%
Open Space	64,185	3,384	5%
Other	85,375	10,030	12%
Residential	561,421	57,919	10%
Trans/Comm/Util	84,663	3,906	5%
Total	1,103,453	81,624	7%

Barrington

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	3,892	133	3%
Industrial	0	0	0%
Institutional	0	0	0%
Open Space	19,432	1,002	5%
Residential	22,983	7,905	34%
Transprotation/Utilities	29,128	416	1%
Other	6,775	2,591	38%
Total	82,209	12,047	15%

Bartlett

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	75,950	19,433	26%
Commercial	85,245	8,925	10%
Industrial	12,541	1,214	10%
Institutional	99,025	9,348	9%
Open Space	120,605	11,048	9%
Residential	2,207,161	566,791	26%
Transprotation/Utilities	85,350	5,022	6%
Other	51,491	3,502	7%
Total	2,737,368	625,283	23%

Batavia

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	13,085	92	1%
Commercial	5,585	102	2%
Industrial	82,440	5,829	7%
Institutional	1,203	224	19%
Open Space	0	0	None
Other	26,081	441	2%
Residential	0	0	None
Trans/Comm/Util	2,795	1	0%
Total	131,189	6,689	5%

Bellwood

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	104,392	8,442	8%
Industrial	119,194	14,076	12%
Institutional	80,701	18,032	22%
Open Space	70,699	14,250	20%
Other	35,302	10,817	31%
Residential	1,123,511	501,595	45%
Trans/Comm/Util	207,589	24,291	12%
Total	1,741,388	591,503	34%

Bensenville

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	2,398	463	19%
Commercial	60,485	4,963	8%
Industrial	69,055	4,661	7%
Institutional	39,720	9,808	25%
Open Space	99,187	17,999	18%
Other	20,634	4,041	20%
Residential	643,235	281,112	44%
Trans/Comm/Util	27,726	3,513	13%
Total	962,440	326,560	34%

Berkeley

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	30,925	2,138	7%
Industrial	23,206	2,960	13%
Institutional	13,829	1,484	11%
Open Space	39,544	11,973	30%
Other	8,012	1,267	16%
Residential	398,621	193,166	48%
Trans/Comm/Util	245,034	14,926	6%
Total	759,171	227,913	30%

Bloomingdale

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	345,658	18,628	5%
Industrial	65,448	1,275	2%
Institutional	78,238	6,241	8%
Open Space	155,746	21,253	14%
Residential	1,796,726	452,701	25%
Transprotation/Utilities	32,966	1,790	5%
Other	72,316	7,973	11%

Total	2,547,098	509,861	20%

Bolingbrook

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	180,883	4,792	3%
Commercial	834,955	57,783	7%
Industrial	1,011,137	88,178	9%
Institutional	179,535	21,217	12%
Open Space	354,149	45,861	13%
Other	731,504	41,365	6%
Residential	6,352,269	1,778,917	28%
Trans/Comm/Util	378,628	18,650	5%
Total	10,023,060	2,056,761	21%

Brookfield

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	121,857	20,992	17%
Industrial	8,295	846	10%
Institutional	54,305	19,055	35%
Open Space	139,803	73,882	53%
Other	11,120	2,584	23%
Residential	1,421,373	678,945	48%
Trans/Comm/Util	128,048	14,095	11%
Total	1,884,801	810,399	43%

Carol Stream

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	35,681	966	3%
Commercial	248,590	6,618	3%
Industrial	500,658	21,279	4%
Institutional	109,639	5,150	5%
Open Space	138,435	9,014	7%
Other	65,479	1,917	3%
Residential	2,669,405	481,384	18%
Trans/Comm/Util	53,140	1,025	2%
Total	3,821,027	527,351	14%

Channahon

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	409,122	44,981	11%
Commercial	155,792	9,515	6%
Industrial	106,473	5,022	5%
Institutional	78,541	5,419	7%
Open Space	182,210	42,940	24%
Other	352,400	44,161	13%
Residential	1,356,322	186,631	14%
Trans/Comm/Util	47,534	7,501	16%
Total	2,688,393	346,169	13%

Clarendon Hills

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	10,904	586	5%
Industrial	0	0	None
Institutional	8,444	789	9%
Open Space	25,544	11,770	46%

Other	0	0	None
Residential	211,803	101,625	48%
Trans/Comm/Util	0	0	None
Total	256,695	114,771	45%

Crest Hill

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	114,870	1,868	2%
Commercial	170,835	4,263	2%
Industrial	55,427	1,593	3%
Institutional	42,381	1,489	4%
Open Space	47,421	3,978	8%
Other	108,949	14,612	13%
Residential	1,102,791	116,543	11%
Trans/Comm/Util	129,401	4,144	3%
Total	1,772,074	148,492	8%

Crystal Lawns

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	2,222	220	10%
Commercial	16,909	2,691	16%
Industrial	1,874	251	13%
Institutional	2,139	110	5%
Open Space	0	0	None
Other	2,490	859	34%
Residential	302,244	88,927	29%
Trans/Comm/Util	0	0	None
Total	327,878	93,057	28%

Darien

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	10,525	71	1%
Industrial	0	0	None
Institutional	6,425	531	8%
Open Space	20,287	2,019	10%
Other	972	39	4%
Residential	496,490	143,335	29%
Trans/Comm/Util	2,194	18	1%
Total	536,893	146,013	27%

Deer Park

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	0	0	0%
Industrial	0	0	0%
Institutional	0	0	0%
Open Space	0	0	0%
Residential	74,403	24,592	33%
Transprotation/Utilities	0	0	0%
Other	4,297	289	7%
Total	78,700	24,881	32%

Downers Grove

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	108,893	4,766	4%
Commercial	990,800	55,647	6%

Industrial	175,898	32,910	19%
Institutional	218,810	43,867	20%
Open Space	198,654	40,461	20%
Other	74,850	16,730	22%
Residential	4,793,573	1,809,668	38%
Trans/Comm/Util	428,512	15,502	4%
Total	6,989,990	2,019,549	29%

Downers Grove North Twp

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	15,397	554	4%
Industrial	0	0	0%
Institutional	64,551	9,327	14%
Open Space	1,235	706	57%
Residential	2,668,841	1,000,042	37%
Transprotation/Utilities	890,939	19,109	2%
Other	101,878	26,927	26%
Total	3,742,841	1,056,664	28%

Downers Grove South Twp

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	0	0	0%
Industrial	0	0	0%
Institutional	0	0	0%
Open Space	119	0	0%
Residential	1,054,461	265,801	25%
Transprotation/Utilities	0	0	0%
Other	12,689	7,866	62%
Total	1,067,270	273,667	26%

Elk Grove Village

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	142,667	15,405	11%
Industrial	10,115	1,115	11%
Institutional	127,319	25,659	20%
Open Space	255,724	37,841	15%
Residential	2,499,181	1,036,542	41%
Transprotation/Utilities	109,098	7,215	7%
Other	48,795	4,908	10%
Total	3,192,899	1,128,684	35%

Elmhurst

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	640,077	49,936	8%
Industrial	524,595	50,370	10%
Institutional	408,476	62,381	15%
Open Space	368,425	77,508	21%
Other	140,084	25,887	18%
Residential	3,936,774	1,779,384	45%
Trans/Comm/Util	331,086	36,031	11%
Total	6,349,517	2,081,498	33%

Elwood

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	275,041	12,637	5%
Commercial	16,173	134	1%
Industrial	103,614	1,407	1%
Institutional	503,725	16,735	3%
Open Space	109,355	2,004	2%
Residential	338,953	36,820	11%
Transprotation/Utilities	272,257	2,045	1%
Other	282,876	6,459	2%
Total	1,901,992	78,241	4%

Frankfort

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	655,284	29,443	0%
Commercial	386,236	22,121	6%
Industrial	146,527	8,822	0%
Institutional	129,276	9,356	7%
Open Space	229,034	30,387	13%
Residential	3,214,219	466,252	15%
Transprotation/Utilities	107,487	9,887	9%
Other	874,207	31,626	4%
Total	5,742,270	607,894	11%

Franklin Park

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	0	0	None
Industrial	22,305	473	2%
Institutional	8,400	22	0%
Open Space	0	0	None
Other	0	0	None
Residential	0	0	None
Trans/Comm/Util	6,057	49	1%
Total	36,762	544	1%

Geneva

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	13,595	2,307	17%
Commercial	4,760	258	5%
Industrial	26,659	1,874	7%
Institutional	940	0	0%
Open Space	100	0	0%
Other	6,484	395	6%
Residential	23,376	4,917	21%
Trans/Comm/Util	22,845	351	2%
Total	98,758	10,103	10%

Glen Ellyn

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	227,657	22,785	10%
Industrial	0	0	None
Institutional	181,182	29,391	16%
Open Space	187,487	51,174	27%
Other	46,361	20,702	45%
Residential	2,321,987	1,044,902	45%
Trans/Comm/Util	36,680	2,542	7%

Total	3,001,354	1,171,496	39%

Glendale Heights

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	15,817	758	5%
Commercial	242,240	10,104	4%
Industrial	216,908	14,331	7%
Institutional	62,950	6,091	10%
Open Space	84,232	10,352	12%
Other	58,101	7,303	13%
Residential	1,605,232	489,138	30%
Trans/Comm/Util	34,767	2,716	8%
Total	2,320,247	540,793	23%

Hanover Park

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	148,325	14,076	0%
Commercial	197,479	11,312	6%
Industrial	188,918	2,608	1%
Institutional	83,517	11,552	14%
Open Space	108,991	9,304	9%
Residential	2,361,494	806,867	34%
Transprotation/Utilities	236,856	11,314	5%
Other	124,669	30,102	24%
Total	3,450,249	897,134	26%

Hillside

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	249,163	11,834	5%
Industrial	131,543	16,895	13%
Institutional	151,061	17,766	12%
Open Space	78,346	13,838	18%
Other	30,352	4,016	13%
Residential	694,146	284,645	41%
Trans/Comm/Util	256,966	21,734	8%
Total	1,591,578	370,728	23%

Hinsdale

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	43,782	8,317	19%
Industrial	0	0	None
Institutional	9,540	2,435	26%
Open Space	52,384	5,252	10%
Other	3,550	1,101	31%
Residential	356,397	171,326	48%
Trans/Comm/Util	180	0	0%
Total	465,834	188,431	40%

Hoffman Estates

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	91,403	7,488	8%
Industrial	8,583	528	6%
Institutional	52,829	9,302	18%
Open Space	188,250	36,460	19%
Residential	2,517,398	1,066,407	42%

Transprotation/Utilities	78,669	1,427	2%
Other	16,855	1,228	7%
Total	2,953,987	1,122,841	38%

Illinois DOT

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	0	0	0%
Industrial	0	0	0%
Institutional	0	0	0%
Open Space	0	0	0%
Residential	0	0	0%
Transprotation/Utilities	0	0	0%
Other	0	0	0%
Total	0	0	0%

Inverness

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	10,233	556	5%
Industrial	0	0	0%
Institutional	20,947	4,580	22%
Open Space	58,592	23,852	41%
Residential	1,533,808	572,702	37%
Transprotation/Utilities	27,632	8,866	32%
Other	73,083	31,789	43%
Total	1,724,294	642,346	37%

Itasca

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	376	119	32%
Commercial	343,846	18,189	5%
Industrial	611,267	50,996	8%
Institutional	52,067	9,044	17%
Open Space	231,910	42,642	18%
Residential	1,003,595	314,441	31%
Transprotation/Utilities	309,037	11,349	4%
Other	258,110	14,619	6%
Total	2,810,208	461,399	16%

Joliet

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	314,258	24,188	8%
Commercial	1,049,845	82,547	8%
Industrial	322,585	23,189	7%
Institutional	393,345	33,418	8%
Open Space	360,580	55,443	15%
Other	655,227	38,181	6%
Residential	7,935,752	1,686,720	21%
Trans/Comm/Util	379,523	23,030	6%
Total	11,411,117	1,966,716	17%

La Grange

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	83,636	10,666	13%
Industrial	37,804	2,924	8%

Institutional	73,231	26,081	36%
Open Space	48,784	14,107	29%
Other	17,670	4,037	23%
Residential	834,805	503,218	60%
Trans/Comm/Util	178,553	21,566	12%
Total	1,274,482	582,601	46%

La Grange Park

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	46,060	6,468	14%
Industrial	6,155	1,284	21%
Institutional	47,281	15,171	32%
Open Space	64,800	39,179	60%
Other	3,835	935	24%
Residential	1,030,677	619,917	60%
Trans/Comm/Util	55,488	13,071	24%
Total	1,254,297	696,025	55%

Lisle

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	8,869	292	3%
Commercial	525,509	36,800	7%
Industrial	71,599	8,580	12%
Institutional	147,518	8,884	6%
Open Space	179,457	25,891	14%
Other	161,637	24,998	15%
Residential	1,842,081	467,996	25%
Trans/Comm/Util	394,726	19,619	5%
Total	3,331,397	593,059	18%

Lockport

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	269,870	7,453	0%
Commercial	217,195	17,650	8%
Industrial	64,562	8,176	13%
Institutional	159,372	16,593	10%
Open Space	93,868	18,858	20%
Residential	2,765,534	513,643	19%
Transprotation/Utilities	293,535	14,904	5%
Other	852,837	44,937	5%
Total	4,716,772	642,213	14%

Lombard

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	762,709	51,773	7%
Industrial	146,228	15,141	10%
Institutional	200,564	33,938	17%
Open Space	322,103	47,272	15%
Other	175,655	15,524	9%
Residential	3,678,246	1,195,505	33%
Trans/Comm/Util	257,425	10,933	4%
Total	5,542,929	1,370,085	25%

Lyons

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy

Agriculture	0	0	None
Commercial	15,784	1,008	6%
Industrial	650	14	2%
Institutional	1,300	184	14%
Open Space	12,668	5,486	43%
Other	4,227	2,210	52%
Residential	85,762	37,511	44%
Trans/Comm/Util	100	1	1%
Total	120,491	46,415	39%

Manhattan

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	569,883	7,445	1%
Commercial	42,677	1,334	3%
Industrial	10,586	155	1%
Institutional	37,756	2,620	7%
Open Space	37,988	2,770	7%
Residential	869,484	75,782	9%
Transprotation/Utilities	60,783	1,261	2%
Other	514,069	2,120	0%
Total	2,143,224	93,487	4%

Maywood

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	5,566	207	4%
Industrial	214	0	0%
Institutional	7,754	577	7%
Open Space	777	568	73%
Other	0	0	None
Residential	74,718	22,473	30%
Trans/Comm/Util	1,297	64	5%
Total	90,325	23,888	26%

Melrose Park

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	75,547	4,919	7%
Industrial	133,926	10,037	7%
Institutional	35,142	3,952	11%
Open Space	4,365	1,172	27%
Other	9,781	2,362	24%
Residential	224,607	90,158	40%
Trans/Comm/Util	162,111	6,677	4%
Total	645,479	119,278	18%

Milton Twp

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	9,050	337	4%
Commercial	820,915	58,287	7%
Industrial	173,511	15,280	9%
Institutional	722,224	121,381	17%
Open Space	3,330,985	497,741	15%
Residential	29,883,099	11,230,219	38%
Transprotation/Utilities	1,153,515	95,403	8%
Other	1,553,764	352,203	23%
Total	37,647,064	12,370,850	33%

Minooka

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	459,463	22,683	5%
Commercial	50,920	1,866	4%
Industrial	0	0	None
Institutional	0	0	None
Open Space	4,176	54	1%
Other	92,087	7,445	8%
Residential	551,699	49,316	9%
Trans/Comm/Util	129,324	10,589	8%
Total	1,287,669	91,954	7%

Mokena

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	114,118	5,544	5%
Commercial	318,029	14,127	4%
Industrial	228,966	16,108	7%
Institutional	49,545	6,810	14%
Open Space	81,594	7,192	9%
Residential	2,671,729	406,699	15%
Transprotation/Utilities	139,706	7,950	6%
Other	625,058	18,666	3%
Total	4,228,745	483,096	11%

Naperville

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	207,184	4,758	2%
Commercial	1,779,245	86,616	5%
Industrial	271,959	7,744	3%
Institutional	616,758	51,152	8%
Open Space	727,095	82,632	11%
Other	575,792	21,501	4%
Residential	13,956,352	3,332,626	24%
Trans/Comm/Util	446,465	17,068	4%
Total	18,580,850	3,604,098	19%

Naperville Township

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	0	0	0%
Industrial	0	0	0%
Institutional	0	0	0%
Open Space	0	0	0%
Residential	0	0	0%
Transprotation/Utilities	0	0	0%
Other	0	0	0%
Total	0	0	0%

New Lenox

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	1,323,680	27,503	0%
Commercial	333,972	17,248	5%
Industrial	168,529	10,412	6%
Institutional	225,671	11,620	5%
Open Space	350,418	17,800	5%
Residential	3,416,980	439,193	13%
Transprotation/Utilities	357,948	15,807	4%

Other	1,069,918	37,632	4%
Total	7,247,116	577,215	8%

Northlake

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	162,550	10,273	6%
Industrial	225,774	9,547	4%
Institutional	100,365	11,021	11%
Open Space	38,930	3,823	10%
Other	77,948	7,805	10%
Residential	681,917	178,014	26%
Trans/Comm/Util	269,795	12,313	5%
Total	1,557,278	232,798	15%

North Riverside

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	24,704	2,313	9%
Industrial	0	0	0%
Institutional	8,401	2,300	27%
Open Space	8,372	3,266	39%
Residential	253,689	125,062	49%
Transprotation/Utilities	1,168	80	7%
Other	0	0	0%
Total	296,334	133,022	45%

Oak Brook

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	14	0	0%
Industrial	0	0	None
Institutional	413	51	12%
Open Space	1,517	124	8%
Other	904	72	8%
Residential	9,214	2,867	31%
Trans/Comm/Util	102	0	0%
Total	12,164	3,114	26%

Oakbrook Terrace

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	1,268	0	0%
Industrial	0	0	None
Institutional	2,323	16	1%
Open Space	18	0	0%
Other	2,898	510	18%
Residential	1,605	16	1%
Trans/Comm/Util	0	0	None
Total	8,111	541	7%

Orland Park

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	71,097	16,398	23%
Commercial	170,244	45,145	27%
Industrial	12,605	2,137	17%
Institutional	63,560	15,434	24%

Open Space	186,509	62,102	33%
Residential	1,804,818	639,447	35%
Transprotation/Utilities	65,558	15,853	24%
Other	96,926	22,517	23%
Total	2,471,317	819,033	33%

Oswego

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	2,099	105	5%
Commercial	566	4	1%
Industrial	0	0	None
Institutional	0	0	None
Open Space	0	0	None
Other	320	0	0%
Residential	1,303	148	11%
Trans/Comm/Util	0	0	None
Total	4,287	257	6%

Palatine

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	603	0	0%
Commercial	411,663	54,235	13%
Industrial	100,878	18,169	18%
Institutional	290,238	47,636	16%
Open Space	268,930	68,790	26%
Residential	4,229,184	1,817,014	43%
Transprotation/Utilities	420,738	48,884	12%
Other	109,152	29,079	27%
Total	5,831,386	2,083,805	36%

Plainfield

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	499,147	15,458	3%
Commercial	385,772	12,668	3%
Industrial	114,329	3,654	3%
Institutional	192,787	6,295	3%
Open Space	244,008	19,643	8%
Other	815,738	15,473	2%
Residential	4,399,094	479,734	11%
Trans/Comm/Util	217,427	18,704	9%
Total	6,868,301	571,630	8%

Rockdale

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	27,223	2,285	8%
Industrial	82,167	5,407	7%
Institutional	12,743	1,158	9%
Open Space	10,759	1,513	14%
Other	16,384	3,613	22%
Residential	222,442	51,004	23%
Trans/Comm/Util	11,684	1,881	16%
Total	383,402	66,862	17%

Romeoville

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	172,741	3,693	2%

Commercial	282,688	7,739	3%
Industrial	384,222	13,699	4%
Institutional	53,639	1,322	2%
Open Space	58,069	5,535	10%
Other	296,440	5,047	2%
Residential	1,851,020	231,312	12%
Trans/Comm/Util	200,407	6,304	3%
Total	3,299,225	274,651	8%

Rolling Meadows

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	584,559	54,824	9%
Industrial	189,575	22,617	12%
Institutional	127,672	21,961	17%
Open Space	75,064	6,105	8%
Residential	1,629,699	687,838	42%
Transprotation/Utilities	470,616	10,326	2%
Other	54,518	4,651	9%
Total	3,131,704	808,322	26%

Roselle

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	5,942	5	0%
Commercial	168,798	13,000	8%
Industrial	137,058	9,849	7%
Institutional	92,457	13,378	14%
Open Space	63,045	11,823	19%
Residential	2,088,739	565,617	27%
Transprotation/Utilities	42,395	2,128	5%
Other	221,155	17,075	8%
Total	2,819,590	632,874	22%

Schaumburg

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	6,067	859	14%
Commercial	1,566,165	142,799	9%
Industrial	409,978	46,380	11%
Institutional	237,166	45,187	19%
Open Space	498,640	60,885	12%
Residential	4,442,036	1,651,562	37%
Transprotation/Utilities	973,888	62,292	6%
Other	247,988	25,453	10%
Total	8,381,928	2,035,417	24%

Shorewood

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	189,363	4,329	2%
Commercial	363,007	21,938	6%
Industrial	61,062	2,628	4%
Institutional	58,275	5,834	10%
Open Space	121,594	20,254	17%
Other	489,661	20,881	4%
Residential	2,051,805	331,155	16%
Trans/Comm/Util	109,679	1,033	1%
Total	3,444,447	408,052	12%

St. Charles

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	11,692	0	0%
Commercial	83,411	7,125	9%
Industrial	42,977	5,241	12%
Institutional	0	0	None
Open Space	15,329	415	3%
Other	20,080	673	3%
Residential	5,113	978	19%
Trans/Comm/Util	4,288	192	4%
Total	182,891	14,625	8%

Stone Park

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	88,431	10,163	11%
Industrial	18,475	571	3%
Institutional	7,624	351	5%
Open Space	1,915	777	41%
Other	7,197	1,151	16%
Residential	174,127	45,043	26%
Trans/Comm/Util	12,731	102	1%
Total	310,500	58,158	19%

Streamwood

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	23,822	2,033	9%
Industrial	116,178	9,054	8%
Institutional	1,083	140	13%
Open Space	0	0	0%
Residential	185,589	69,834	38%
Transprotation/Utilities	28,897	5,962	21%
Other	73,902	9,499	13%
Total	429,472	96,521	22%

Villa Park

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	360,183	17,193	5%
Industrial	96,047	8,633	9%
Institutional	81,623	18,748	23%
Open Space	130,118	40,036	31%
Other	40,839	7,353	18%
Residential	1,718,327	874,629	51%
Trans/Comm/Util	43,874	3,562	8%
Total	2,471,011	970,156	39%

Warrenville

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	24,140	7,289	30%
Commercial	458,217	11,028	2%
Industrial	32,913	1,793	5%
Institutional	73,704	12,309	17%
Open Space	168,508	41,870	25%
Other	177,438	22,980	13%
Residential	1,350,919	358,251	27%
Trans/Comm/Util	110,953	2,482	2%

Total	2,396,793	458,001	19%

Wayne Township

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	0	0	0%
Industrial	0	0	0%
Institutional	0	0	0%
Open Space	0	0	0%
Residential	0	0	0%
Transprotation/Utilities	0	0	0%
Other	0	0	0%
Total	0	0	0%

West Chicago

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	302,095	13,196	4%
Commercial	281,355	14,384	5%
Industrial	354,467	26,180	7%
Institutional	119,594	17,840	15%
Open Space	154,858	27,600	18%
Other	288,536	26,043	9%
Residential	1,671,773	455,112	27%
Trans/Comm/Util	229,849	8,315	4%
Total	3,402,527	588,669	17%

Western Springs

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	24,254	4,638	19%
Industrial	0	0	None
Institutional	38,269	15,016	39%
Open Space	27,801	12,274	44%
Other	1,190	671	56%
Residential	514,332	317,714	62%
Trans/Comm/Util	55,774	8,427	15%
Total	661,620	358,740	54%

Westchester

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	6,603	12	0%
Industrial	576	0	0%
Institutional	4,149	306	7%
Open Space	4,466	4	0%
Other	61	0	0%
Residential	7,894	339	4%
Trans/Comm/Util	1,782	7	0%
Total	25,532	668	3%

Westmont

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	None
Commercial	322,364	11,679	4%
Industrial	33,935	5,358	16%
Institutional	28,016	1,573	6%
Open Space	122,691	13,872	11%

Other	30,463	3,562	12%
Residential	1,045,495	310,634	30%
Trans/Comm/Util	18,357	391	2%
Total	1,601,321	347,070	22%

Wheaton

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	1,399	234	17%
Commercial	415,375	38,814	9%
Industrial	22,351	2,665	12%
Institutional	323,395	65,286	20%
Open Space	235,333	50,372	21%
Other	63,424	14,592	23%
Residential	4,523,378	1,849,379	41%
Trans/Comm/Util	46,398	6,545	14%
Total	5,631,054	2,027,887	36%

Winfield

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	8,990	712	8%
Commercial	42,891	2,664	6%
Industrial	10,168	1,107	11%
Institutional	58,806	6,187	11%
Open Space	41,938	7,243	17%
Other	37,494	9,358	25%
Residential	965,035	248,452	26%
Trans/Comm/Util	17,684	1,277	7%
Total	1,183,006	276,999	23%

Winfield Township

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	0	0	0%
Industrial	0	0	0%
Institutional	0	0	0%
Open Space	0	0	0%
Residential	0	0	0%
Transprotation/Utilities	0	0	0%
Other	0	0	0%
Total	0	0	0%

Wood Dale

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	88,854	4,991	6%
Industrial	117,246	8,489	7%
Institutional	21,699	2,444	11%
Open Space	101,624	12,886	13%
Residential	627,288	187,066	30%
Transprotation/Utilities	47,978	2,160	5%
Other	79,005	13,742	17%
Total	1,083,693	231,778	21%

Woodridge

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	46,035	1,661	4%
Commercial	275,494	14,754	5%

Industrial	45,562	1,977	4%
Institutional	96,467	8,768	9%
Open Space	303,624	33,750	11%
Other	171,757	16,052	9%
Residential	2,620,079	619,686	24%
Trans/Comm/Util	142,721	7,297	5%
Total	3,701,738	703,945	19%

York Township

LandUse Type	Total ROW (sq. ft.)	Tree Canopy (sq. ft.)	Percent Tree Canopy
Agriculture	0	0	0%
Commercial	0	0	0%
Industrial	0	0	0%
Institutional	0	0	0%
Open Space	0	0	0%
Residential	0	0	0%
Transprotation/Utilities	0	0	0%
Other	0	0	0%
Total	0	0	0%

	Precentile	
	25%	50%
all	0.05720	0.10284
>=17	0.07268	0.12720
P8	*0.00017*	*0.0002*

Minnesota P8 Study Data w/Canopy Cover >=17%

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.478900137	0.465783669	17
0.527021071	0.512586632	17
0.331667545	0.322583591	17
0.073925248	0.071900529	17
0.347252324	0.337741523	17
0.201400076	0.195883983	17
0.267683037	0.260351537	17
0.022440592	0.021825972	17
0.080435504	0.078232478	17
0.204715671	0.199108768	17
0.52839083	0.513918875	17
0.240855876	0.234259138	19.3
0.070310758	0.068385035	19.3
0.046610845	0.045334233	19.3
0.643287675	0.625668841	19.3
0.360495987	0.350622458	19.3
0.183081466	0.178067096	19.3
0.716827909	0.6971949	19.3
0.145159999	0.14118425	19.3
0.119446742	0.116175247	19.3
0.074772407	0.072724486	19.3
0.109852351	0.106843634	19.3
0.107849428	0.104895569	19.3
0.245481878	0.23875844	19.3
0.136628564	0.132886481	19.3
1.073656048	1.044249969	19.3
0.075624321	0.073553067	19.3
0.170524229	0.165853786	19.3
0.183592089	0.178563734	19.3
0.11043868	0.107413904	19.3
0.067262452	0.065420219	19.3
0.065425923	0.06363399	19.3
0.062561469	0.06084799	19.3
0.052736493	0.051292107	19.3
0.117863162	0.114635039	19.3
0.042273844	0.041116017	19.3
0.105693272	0.102798467	19.3
0.284970702	0.277165716	19.3
0.193399832	0.188102856	19.3
0.045820497	0.044565531	19.3
0.070030021	0.068111987	19.3
0.035609182	0.034633892	19.3

Minnesota P8 Study Data

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.143794393	0.139856047	8
0.181163053	0.176201226	8
0.113477515	0.110369509	8
0.042256299	0.041098953	8
0.056556681	0.055007666	8
0.12277908	0.119416317	8
0.365527176	0.35551585	6
0.379844655	0.369441191	6
0.242530154	0.235887561	6
0.152576178	0.14839731	6
0.391064264	0.380353509	6
0.050018833	0.04864888	6
0.364798781	0.354807405	1
0.178221491	0.173340231	1
0.089046387	0.086607519	1
0.118716956	0.115465448	1
0.098689377	0.0959864	1
0.20550576	0.199877218	1
0.134710623	0.13102107	1
0.092302775	0.089774719	1
0.059127001	0.057507587	1
0.021115188	0.020536869	1
0.478900137	0.465783669	17
0.527021071	0.512586632	17
0.331667545	0.322583591	17
0.073925248	0.071900529	17
0.347252324	0.337741523	17
0.201400076	0.195883983	17
0.267683037	0.260351537	17
0.022440592	0.021825972	17
0.080435504	0.078232478	17
0.204715671	0.199108768	17
0.52839083	0.513918875	17
0.259906174	0.252787673	6
0.132776646	0.129140062	6
0.128927288	0.125396133	6
0.36422708	0.354251362	6
0.278882951	0.2712447	6
0.199910351	0.19443506	6
0.061952556	0.060255754	6
0.171727795	0.167024388	6
0.228549334	0.222289657	8
0.074491629	0.072451398	8
0.080647635	0.078438798	8
0.098955147	0.09624489	8
0.136977135	0.133225505	8
0.119204238	0.115939385	8
0.074832994	0.072783413	8
0.035477539	0.034505854	8
0.10017293	0.09742932	8

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.05851956	0.056916784	19.3
0.032602519	0.031709577	19.3
0.113142866	0.110044026	19.3
0.647701793	0.629962062	19.3
0.06912749	0.067234176	19.3
0.112332124	0.109255489	19.3
0.052864941	0.051417038	19.3
0.091088972	0.088594161	19.3
0.100160089	0.097416831	19.3
0.087442626	0.085047683	19.3
0.082874964	0.080605123	19.3
0.41256064	0.401261127	19.3
0.677304458	0.658753947	19.3
0.433141	0.421277817	19.3
0.152699775	0.148517521	19.3
0.194804118	0.18946868	19.3
0.238792151	0.232251936	19.3
0.206325979	0.200674972	19.3
0.287412928	0.279541052	19.3
0.105740543	0.102844443	19.3
0.070645864	0.068710963	19.3
0.075200241	0.073140602	19.3
0.043945664	0.042742048	19.3
0.127363866	0.123875531	19.3
0.091996654	0.089476982	19.3
0.119630381	0.116353857	19.3
0.126868748	0.123393974	19.3
0.052645421	0.051203529	19.3
0.090521795	0.088042518	19.3
0.070510782	0.068579581	19.3
0.108744609	0.105766232	19.3
0.139856099	0.136025618	19.3
0.186558099	0.181448509	19.3
0.145794484	0.141801358	19.3
0.151404654	0.147257872	19.3
0.05515264	0.053642079	19.3
0.059794225	0.058156537	19.3
0.054787329	0.053286773	19.3
0.162537151	0.158085465	19.3
0.149017445	0.144936045	19.3
0.099861489	0.097126409	19.3
0.004490739	0.004367744	19.3
0.054353506	0.052864833	19.3
0.074594169	0.072551129	19.3
0.424714983	0.413082577	31.97277016
0.139914176	0.136082104	31.97277016
0.134194721	0.130519298	31.97277016
0.226190842	0.219995761	31.97277016
0.245530389	0.238805623	31.97277016
0.330467202	0.321416124	20.80951409
0.334550736	0.325387816	20.80951409

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.10818992	0.105226735	8
0.133695106	0.130033366	8
0.286432144	0.27858713	11
0.188181192	0.183027148	11
0.28081756	0.273126323	11
0.240785981	0.234191158	11
0.066770441	0.064941683	11
0.210205201	0.204447946	7
0.080937887	0.078721101	7
0.069750236	0.067839866	7
0.096768789	0.094118415	7
0.086087272	0.083729451	7
0.052988543	0.051537254	6
0.027801878	0.02704042	6
0.194443883	0.189118311	6
0.039560802	0.038477282	6
0.098309991	0.095617405	6
0.851886835	0.828554733	6.9
0.995444817	0.968180845	6.9
0.155284578	0.15103153	6.9
0.115524223	0.112360161	6.9
0.479177349	0.466053289	6.9
0.518418	0.504219188	6.9
0.421660991	0.410112231	6.9
0.250663568	0.24379821	6.9
0.087976222	0.085566664	6.9
0.051400724	0.049992923	6.9
0.04224118	0.041084248	6.9
0.279328302	0.271677853	6.9
0.202631502	0.197081682	6.9
0.188852048	0.18367963	6.9
0.291938947	0.283943109	6.9
0.144744138	0.140779779	6.9
0.125281335	0.121850037	6.9
0.134962056	0.131265617	6.9
0.099513948	0.096788387	6.9
0.556795477	0.541545555	15.1
0.304192125	0.295860688	15.1
0.520890258	0.506623733	15.1
0.714925069	0.695344177	15.1
0.658252579	0.640223875	15.1
0.052738645	0.0512942	15.1
0.41056989	0.399324901	15.1
0.320529934	0.311751025	15.1
0.209483851	0.203746353	15.1
0.180158178	0.175223874	15.1
0.511533347	0.497523096	15.1
0.15567568	0.151411921	15.1
0.083681728	0.081389791	15.1
0.074379302	0.072342147	15.1
0.066144215	0.064332609	15.1

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.104178189	0.10132488	20.80951409
0.079183677	0.077014936	20.80951409
0.253074568	0.246143176	20.80951409
0.814911348	0.792591959	34.02415099
0.138941264	0.135135839	34.02415099
0.050534163	0.049150096	34.02415099
0.209257675	0.203526372	34.02415099
0.321878567	0.31306272	37.44161296
0.1034855	0.100651163	37.44161296
0.24246091	0.235820213	37.44161296
0.313148159	0.304571427	37.44161296
0.785358335	0.763848365	19.59
0.832996237	0.810181525	19.59
0.404514356	0.39343522	19.59
1.482767623	1.442156496	19.59

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.05248814	0.051050557	15.1
0.155356253	0.151101242	15.1
0.062941019	0.061217145	15.1
0.355438113	0.345703113	15.1
0.473400756	0.460434909	15.1
0.171951978	0.167242431	15.1
0.38325509	0.372758219	15.1
0.167863037	0.163265481	15.1
0.028692572	0.027906719	15.1
0.268273997	0.260926312	15.1
0.183142091	0.178126061	15.1
0.137603833	0.133835039	15.1
0.29273069	0.284713167	15.1
0.099761184	0.097028851	15.1
0.108554498	0.105581328	15.1
0.111375094	0.108324671	15.1
0.035350744	0.034382532	15.1
0.240855876	0.234259138	19.3
0.070310758	0.068385035	19.3
0.046610845	0.045334233	19.3
0.643287675	0.625668841	19.3
0.360495987	0.350622458	19.3
0.183081466	0.178067096	19.3
0.716827909	0.6971949	19.3
0.145159999	0.14118425	19.3
0.119446742	0.116175247	19.3
0.074772407	0.072724486	19.3
0.109852351	0.106843634	19.3
0.107849428	0.104895569	19.3
0.245481878	0.23875844	19.3
0.136628564	0.132886481	19.3
1.073656048	1.044249969	19.3
0.075624321	0.073553067	19.3
0.170524229	0.165853786	19.3
0.183592089	0.178563734	19.3
0.11043868	0.107413904	19.3
0.067262452	0.065420219	19.3
0.065425923	0.06363399	19.3
0.062561469	0.06084799	19.3
0.052736493	0.051292107	19.3
0.117863162	0.114635039	19.3
0.042273844	0.041116017	19.3
0.105693272	0.102798467	19.3
0.284970702	0.277165716	19.3
0.193399832	0.188102856	19.3
0.045820497	0.044565531	19.3
0.070030021	0.068111987	19.3
0.035609182	0.034633892	19.3
0.05851956	0.056916784	19.3
0.032602519	0.031709577	19.3
0.113142866	0.110044026	19.3

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.647701793	0.629962062	19.3
0.06912749	0.067234176	19.3
0.112332124	0.109255489	19.3
0.052864941	0.051417038	19.3
0.091088972	0.088594161	19.3
0.100160089	0.097416831	19.3
0.087442626	0.085047683	19.3
0.082874964	0.080605123	19.3
0.41256064	0.401261127	19.3
0.677304458	0.658753947	19.3
0.433141	0.421277817	19.3
0.152699775	0.148517521	19.3
0.194804118	0.18946868	19.3
0.238792151	0.232251936	19.3
0.206325979	0.200674972	19.3
0.287412928	0.279541052	19.3
0.105740543	0.102844443	19.3
0.070645864	0.068710963	19.3
0.075200241	0.073140602	19.3
0.043945664	0.042742048	19.3
0.127363866	0.123875531	19.3
0.091996654	0.089476982	19.3
0.119630381	0.116353857	19.3
0.126868748	0.123393974	19.3
0.052645421	0.051203529	19.3
0.090521795	0.088042518	19.3
0.070510782	0.068579581	19.3
0.108744609	0.105766232	19.3
0.139856099	0.136025618	19.3
0.186558099	0.181448509	19.3
0.145794484	0.141801358	19.3
0.151404654	0.147257872	19.3
0.05515264	0.053642079	19.3
0.059794225	0.058156537	19.3
0.054787329	0.053286773	19.3
0.162537151	0.158085465	19.3
0.149017445	0.144936045	19.3
0.099861489	0.097126409	19.3
0.004490739	0.004367744	19.3
0.054353506	0.052864833	19.3
0.074594169	0.072551129	19.3
0.10166053	0.098876177	7
0.05979631	0.058158564	7
0.143006343	0.13908958	7
0.030343103	0.029512044	7
0.099411853	0.096689088	0.4
0.081031919	0.078812557	0.4
0.150441971	0.146321556	0.4
0.321234093	0.312435898	0.4
0.271296982	0.263866501	0.4
0.130189552	0.126623825	0.4

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.068986766	0.067097306	0.4
0.076295065	0.07420544	0.4
0.069629135	0.067722081	0.4
0.071416676	0.069460664	0.4
0.123739568	0.120350498	0.4
0.111731267	0.108671089	0.4
0.110007056	0.106994102	0.4
0.411248344	0.399984773	0.4
0.133231147	0.129582115	0.4
0.122855866	0.119490999	0.4
0.10779179	0.104839509	0.4
0.069147249	0.067253394	0.4
0.132032988	0.128416772	0.1
0.12366494	0.120277914	0.1
0.054945407	0.053440522	0.1
0.036131168	0.035141581	0.1
0.078798626	0.076640432	0.1
0.016863053	0.016401195	0.1
0.118908244	0.115651498	0.1
0.23805454	0.231534528	0.1
0.057413184	0.055840709	0.1
0.105167211	0.102286815	0.1
0.144573108	0.140613434	0.1
0.036551221	0.035550129	0.1
0.063247765	0.061515489	0.1
0.071005182	0.06906044	0.1
0.028181987	0.027410118	0.1
0.032881248	0.031980672	0.1
0.052032888	0.050607773	0.1
0.019325255	0.018795961	0.1
0.111957553	0.108891177	0.1
0.058984415	0.057368907	0.1
0.062102271	0.060401368	0.1
0.029621506	0.028810211	0.1
0.047378103	0.046080477	0.1
0.052039126	0.05061384	0.1
0.047533536	0.046231652	0.1
0.212300193	0.20648556	0.1
0.058055851	0.056465775	0.1
0.083305603	0.081023968	0.1
0.065920299	0.064114826	0.1
0.055384657	0.053867741	0.1
0.029975846	0.029154846	0.1
0.029764265	0.028949059	0.1
0.043108733	0.041928039	0.1
0.030149736	0.029323973	0.1
0.040596166	0.039484288	0.1
0.019627442	0.019089871	0.5
0.045489351	0.044243456	0.5
0.082615179	0.080352454	0.5
0.096342933	0.093704222	0.5

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.03000418	0.029182404	0.5
0.062421639	0.060711989	0.5
0.044763079	0.043537075	0.5
0.053830656	0.052356303	0.5
0.03752474	0.036496984	0.5
0.070820605	0.068880918	0.5
0.067345494	0.065500986	0.5
0.045108296	0.043872837	0.5
0.139565378	0.135742859	0.5
0.252323047	0.245412238	0.5
0.337103536	0.327870697	0.5
0.190760856	0.185536157	0.5
0.100318597	0.097570998	0.5
0.038663545	0.0376046	0.5
0.0326672	0.031772487	0.5
0.043725811	0.042528217	0.5
0.05041379	0.04903302	0.5
0.032048885	0.031171106	0.5
0.046837362	0.045554546	0.5
0.103597236	0.100759838	0.5
0.021896257	0.021296546	0.5
0.019521758	0.018987082	0.5
0.040971148	0.039849	0.5
0.025518562	0.024819641	0.5
0.027028078	0.026287813	0.5
0.040603123	0.039491055	0.5
0.02657073	0.025842992	0.5
0.028397241	0.027619477	0.5
0.12803155	0.124524928	0.5
0.03850465	0.037450056	0.5
0.0221184	0.021512605	0.5
0.023765192	0.023114293	0.5
0.033550312	0.032631412	0.5
0.029806924	0.02899055	0.5
0.015874733	0.015439944	0.5
0.014407147	0.014012553	0.5
0.047004897	0.045717492	0.5
0.039050353	0.037980813	0.5
0.043084209	0.041904188	0.5
0.029007863	0.028213375	0.5
0.026201711	0.025484079	0.5
0.029777206	0.028961646	0.5
0.032181471	0.031300062	0.5
0.041002734	0.039879721	0.5
0.038495911	0.037441557	0.5
0.148258571	0.144197957	0.5
0.119952806	0.11666745	0.5
0.14231183	0.138414089	0.5
0.086539026	0.084168832	0.5
0.095803587	0.093179649	0.5
0.029599408	0.028788718	0.5

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.114568135	0.111430258	0.5
0.031756636	0.030886862	0.5
0.026200531	0.025482932	0.5
0.070972597	0.069028747	0.5
0.064353237	0.062590683	0.5
0.074915132	0.072863301	0.5
0.074551597	0.072509723	0.5
0.060952149	0.059282747	0.5
0.037757396	0.036723269	0.5
0.044614301	0.043392372	0.5
0.053204909	0.051747694	0.5
0.032157028	0.031276288	0.5
0.031164107	0.030310562	0.5
0.015835423	0.015401711	0.5
0.015885288	0.01545021	0.5
0.037932776	0.036893845	0.5
0.424714983	0.413082577	31.97277016
0.139914176	0.136082104	31.97277016
0.134194721	0.130519298	31.97277016
0.226190842	0.219995761	31.97277016
0.245530389	0.238805623	31.97277016
0.095646014	0.093026391	0.6
0.216440094	0.210512074	0.6
0.219126813	0.213125207	0.6
0.084816212	0.082493203	0.6
0.285102033	0.277293449	0.6
0.250867638	0.243996691	0.6
0.093561301	0.090998776	0.6
0.109759766	0.106753585	0.6
0.091854516	0.089338737	0.6
0.077354838	0.075236187	0.6
0.055754822	0.054227768	0.6
0.04513659	0.043900356	0.6
0.066854039	0.065022992	0.6
0.161099765	0.156687447	0.6
0.079235271	0.077065117	0.6
0.044878468	0.043649304	0.6
0.340898876	0.331562088	0.6
0.131680675	0.128074108	0.6
0.084703018	0.082383109	0.6
0.097426396	0.09475801	0.6
0.330467202	0.321416124	20.80951409
0.334550736	0.325387816	20.80951409
0.104178189	0.10132488	20.80951409
0.079183677	0.077014936	20.80951409
0.253074568	0.246143176	20.80951409
0.155235801	0.150984089	6.2
0.430794199	0.418995292	6.2
0.30143734	0.293181353	6.2
0.10583785	0.102939086	6.2
0.131983009	0.128368162	6.2

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.07776459	0.075634716	6.2
0.172556351	0.167830251	6.2
0.241421439	0.234809212	6.2
0.354662435	0.34494868	6.2
0.19875389	0.193310273	6.2
0.118180291	0.114943483	6.2
0.1653877	0.160857941	6.2
0.114077593	0.110953152	6.2
0.307881176	0.299448701	6.2
0.071815856	0.06984891	6.2
0.274199504	0.266689527	6.2
0.219626127	0.213610846	6.2
0.059306401	0.057682074	6.2
0.058641334	0.057035222	6.2
0.040732575	0.039616961	6.2
0.090279508	0.087806866	6.2
0.045099743	0.043864518	6.2
0.470450926	0.457565871	6.2
0.125350674	0.121917478	6.2
0.173639297	0.168883536	6.2
0.04554435	0.044296948	6.2
0.229842798	0.223547695	6.2
0.28708799	0.279225014	6.2
0.121349136	0.118025537	6.2
0.090236641	0.087765173	6.2
0.103972724	0.101125043	6.2
0.105919937	0.103018924	6.2
0.062965675	0.061241125	6.2
0.049554264	0.048197036	6.2
0.109085207	0.106097501	6.2
0.059272677	0.057649273	6.2
0.052072635	0.050646432	6.2
0.814911348	0.792591959	34.02415099
0.138941264	0.135135839	34.02415099
0.050534163	0.049150096	34.02415099
0.209257675	0.203526372	34.02415099
0.321878567	0.31306272	37.44161296
0.1034855	0.100651163	37.44161296
0.24246091	0.235820213	37.44161296
0.313148159	0.304571427	37.44161296
0.220166121	0.21413605	12.1
0.045147522	0.043910989	12.1
0.080803211	0.078590113	12.1
0.029022291	0.028227407	12.1
0.133018951	0.12937573	12.1
0.228300017	0.222047169	12.1
0.131785295	0.128175863	12.1
0.211531566	0.205737985	12.1
0.174125501	0.169356424	12.1
0.268940711	0.261574766	12.1
0.111923001	0.108857572	12.1

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.111559216	0.108503751	12.1
0.095663536	0.093043433	12.1
0.125400999	0.121966424	12.1
0.126705842	0.12323553	12.1
0.290731907	0.282769129	12.1
0.097201008	0.094538796	12.1
0.157294392	0.152986297	12.1
0.237926822	0.231410308	12.1
0.340543823	0.331216759	12.1
0.223442582	0.217322773	12.1
0.111884012	0.108819651	12.1
0.089084562	0.086644648	12.1
0.167357225	0.162773523	12.1
0.100843032	0.098081069	12.1
0.092541256	0.090006668	12.1
0.067786877	0.06593028	12.1
0.190484321	0.185267197	12.1
0.278145671	0.270527613	12.1
0.142949838	0.139034623	12.1
0.0412465	0.04011681	12.1
0.080099038	0.077905227	12.1
0.064485256	0.062719087	12.1
0.090439664	0.087962636	12.1
0.083432464	0.081147354	12.1
0.045636526	0.0443866	12.1
0.109449601	0.106451915	12.1
0.08245959	0.080201126	12.1
0.025508609	0.024809961	12.1
0.040265117	0.039162306	12.1
0.071290664	0.069338103	12.1
0.093808916	0.091239608	12.1
0.04354302	0.042350432	12.1
0.049314107	0.047963456	12.1
0.162692938	0.158236985	12.1
0.428704254	0.416962587	12.1
0.223143773	0.217032147	12.1
0.063482055	0.061743362	12.1
0.061911254	0.060215584	12.1
0.067110888	0.065272806	12.1
0.140965551	0.137104683	12.1
0.110781844	0.107747669	12.1
0.03002891	0.029206456	12.1
0.12392183	0.120527768	12.1
0.059179403	0.057558554	12.1
0.097081586	0.094422644	12.1
0.081034184	0.07881476	12.1
0.16896742	0.164339617	12.1
0.1656638	0.161126479	12.1
0.22513963	0.218973341	12.1
0.074278838	0.072244434	12.1
0.114912006	0.111764712	12.1

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.054285777	0.052798958	12.1
0.074954757	0.072901841	12.1
0.105897008	0.102996623	12.1
0.136313621	0.132580164	12.1
0.106168848	0.103261018	12.1
0.158259948	0.153925408	12.1
0.080276129	0.078077468	12.1
0.058007783	0.056419023	12.1
0.248884104	0.242067484	12.1
0.138058217	0.134276977	12.1
0.135631169	0.131916403	12.1
0.082715775	0.080450295	12.1
0.031195016	0.030340624	12.1
0.057179302	0.055613234	12.1
0.047220305	0.045927001	12.1
0.068587662	0.066709133	0.754888737
0.041034545	0.039910661	0.754888737
0.065026575	0.063245579	0.754888737
0.049028986	0.047686144	0.754888737
0.083562605	0.081273931	0.754888737
0.080780497	0.078568021	1.061005285
0.112930662	0.109837634	1.061005285
0.064110127	0.062354232	1.061005285
0.021926942	0.021326391	1.061005285
0.785358335	0.763848365	19.59
0.832996237	0.810181525	19.59
0.404514356	0.39343522	19.59
1.482767623	1.442156496	19.59
0.379135883	0.368751831	14.1
0.31127541	0.302749971	14.1
0.122325632	0.118975288	14.1
1.205647588	1.172626428	14.1
0.396423912	0.385566363	13.72
0.423754057	0.41214797	13.72
0.106897579	0.103969789	13.72
1.102968068	1.07275917	13.72
0.509135731	0.495191149	15.57
1.04921856	1.020481793	15.57
0.147661815	0.143617545	15.57
1.269817628	1.235038932	15.57
0.363084975	0.353140538	7
0.186600218	0.181489474	7
0.095863478	0.093237899	7
0.034566788	0.033620048	7
0.11192289	0.108857464	7
0.329809136	0.320776081	7
0.129205031	0.125666269	7
0.045346304	0.044104326	7
0.356501679	0.346737549	7
0.250510997	0.243649818	7
0.129086553	0.125551035	7

efficiency_lbP_mi	lbP/acre/route	canopy_cover_total_%
0.163294478	0.158822049	7
0.280811268	0.273120203	7
0.185483127	0.18040298	7
0.051730516	0.050313683	7
0.021679618	0.021085841	7
0.040404797	0.039298161	7
0.122043059	0.118700455	7
0.095316598	0.092705997	7
0.101103771	0.098334667	7
0.049829809	0.048465034	7
2.032279985	1.976618411	2
0.929062693	0.903616842	2
0.174912487	0.170121856	2
0.240106039	0.233529838	2
0.029039397	0.028244044	2
0.467708739	0.454898789	2
0.21415588	0.208290422	1
0.208279114	0.202574613	1
0.078325821	0.076180576	1
0.098220521	0.095530385	1
0.031169068	0.030315387	1
0.096081421	0.093449873	1

Appendix G

Estimated TP Removed by Street Sweeping Practices

Simplified Name	Centerline Miles	Curb Miles	Curb/Gutter Qualifier	Curb Miles Adjusted with Curb/Gutter Qualifier	Street Sweeping Frequency by Zone: Residential	Street Sweeping Frequency by Zone: Arterial	Street Sweeping Frequency by Zone: Commercial/Industrial	Percent by Zone: Residential	Percent by Zone: Arterial	Percent by Zone: Commercial/ Industrial	25th Percentile Rate Curb/Gutter Roads TP (lbs/year)	25th Percentile Rate All Roads TP (lbs/year)	50th Percentile Rate Curb/Gutter Roads TP (lbs/year)	50th Percentile Rate All Roads TP (lbs/year)
Addison	96	192	0.75	144	20	20	20	53%	23%	24%	209.32	279.10	366.33	488.44
Barrington	50	100	0.66	66	12	12	12	28%	67%	5%	57.56	87.22	100.74	152.64
Bartlett	140	280	1	280	4	4	4	82%	14%	4%	81.40	81.40	142.46	142.46
Bensenville	59	118	1	118	12	12	12	67%	20%	14%	102.92	102.92	180.11	180.11
Berkeley	22	44	1	44	15	15	15	53%	40%	7%	47.97	47.97	83.95	83.95
Bloomingdale	125	250	0.75	187.5	9	9	9	71%	13%	16%	122.65	163.53	214.64	286.19
Bolingbrook	305	610	1	610	10	10	10	63%	18%	18%	443.35	443.35	775.90	775.90
Brookfield	57	114	1	114	32	32	0	75%	18%	7%	246.83	246.83	431.97	431.97
Carol Stream	112	224	1	224	8	8	8	70%	11%	20%	130.24	130.24	227.94	227.94
Channahon	83	166	0.66	109.56	4	4	4	50%	40%	10%	31.85	48.26	55.74	84.46
Crest Hill	39	78	1	78	95	95	95	62%	25%	13%	538.57	538.57	942.53	942.53
Downers Grove	120	240	0.66	158.4	17	17	17	69%	15%	17%	195.72	296.54	342.52	518.96
Downers Grove Township	35	70	0.5	35	2	2	2	63%	18%	18%	5.09	10.18	8.90	17.81
Elk Grove Village	128	256	1	256	12	4	10	78%	17%	5%	196.28	196.28	343.50	343.50
Elmhurst	115	230	1	230	9	9	9	62%	20%	18%	150.45	150.45	263.30	263.30
Elwood	30	60	0.75	45	7	7	7	18%	76%	6%	22.89	30.53	40.07	53.42
Frankfort	100	200	1	200	4	4	4	56%	35%	9%	58.14	58.14	101.76	101.76
Glen Ellyn	83	166	1	166	20	20	0	77%	15%	8%	223.00	223.00	390.26	390.26
Glendale Heights	72	144	1	144	18	18	18	69%	11%	20%	188.39	188.39	329.69	329.69
Hanover Park	100	200	1	200	15	15	15	68%	20%	11%	218.04	218.04	381.59	381.59
Hoffman Estates	160	320	0.75	240	4	4	4	85%	11%	3%	69.77	93.03	122.11	162.81
Illinois DOT	2,700	5400	0.33	1782	0	2	2	0%	0%	0%	0.00	0.00	0.00	0.00
Itasca	43	86	0.75	64.5	15	15	15	39%	23%	37%	70.32	93.76	123.06	164.08
Joliet	584	1168	1	1168	5	9	5	70%	18%	12%	452.41	452.41	791.75	791.75
Lisle	45	90	0.66	59.4	9	9	9	55%	27%	18%	38.86	58.87	68.00	103.03
Lockport	103	206	1	206	13	13	13	59%	35%	6%	194.64	194.64	340.63	340.63
Lombard	145	290	1	290	5	5	5	66%	17%	16%	105.39	105.39	184.44	184.44
Manhattan	75	150	0.75	112.5	0	0	0	41%	57%	2%	0.00	0.00	0.00	0.00
Milton Township	25	50	1	50	2	0	0	79%	18%	3%	5.77	5.77	10.10	10.10
Minooka	63	126	0.75	94.5	5	5	5	43%	53%	4%	34.34	45.79	60.10	80.13
Naperville	400	800	1	800	2	2	0	75%	14%	11%	103.45	103.45	181.05	181.05
New Lenox	130	260.5	0.75	195.375	12	12	12	47%	46%	7%	170.40	227.20	298.21	397.62
North Riverside	33	66	1	66	38	38	38	86%	6%	8%	182.28	182.28	319.01	319.01
Oak Brook	55	110	0.66	72.6	6	6	12	76%	24%	0%	31.70	48.03	55.47	84.05
Oakbrook Terrace	73	146	1	146	4	4	4	20%	65%	16%	42.45	42.45	74.28	74.28
Orland Park	40	80	1	80	0	4	0	73%	20%	7%	4.55	4.55	7.97	7.97
Palatine	156	312	0.75	234	8	8	8	73%	19%	9%	136.06	181.41	238.11	317.48
Plainfield	196	392	0.75	294	4	4	0	64%	29%	7%	79.25	105.67	138.69	184.92
Romeoville	135	270	1	270	6	5	5	56%	24%	20%	109.13	109.13	190.98	190.98
Roselle	75	150	0.75	112.5	13	13	13	74%	15%	11%	106.30	141.73	186.03	248.03
Schaumburg	219	438	0.75	328.5	4	4	2	53%	23%	24%	84.24	112.33	147.43	196.58
Streamwood	96	192	1	192	6	6	6	43%	24%	33%	83.73	83.73	146.53	146.53
Warrenville	28	56	1	56	11	11	11	56%	23%	20%	44.77	44.77	78.35	78.35
West Chicago	90	180	1	180	47	0	0	49%	32%	19%	301.73	301.73	528.05	528.05
Western Springs	97	194	1	194	5	5	5	78%	19%	4%	70.50	70.50	123.38	123.38
Wheaton	167	334	0.75	250.5	12	12	12	80%	12%	8%	218.48	291.31	382.35	509.81
Winfield	16	32	1	32	1	1	1	82%	14%	4%	2.33	2.33	4.07	4.07
Wood Dale	48	96	0.75	72	12	12	12	58%	23%	19%	62.80	83.73	109.90	146.53
Woodridge	195	390	1	390	5	5	5	71%	21%	9%	141.73	141.73	248.03	248.03
Total											**6218**	**6869**	**10882**	**12021**