2016 City of Middleton Neighborhood Leaf Pilot Summary Report

Photo: Friends of Pheasant Branch Conservancy board members and pilot volunteers (Lloyd Eagan, Herb Garn, and Stefanie Brouwer)

Madison Area Municipal Stormwater Partnership (MAMSWaP)

June 2017

Introduction

Leaves left in the street are a known source of phosphorus to area waters in urban environments with mature terrace trees. When it rains, water runs through fallen leaves creating a "leaf tea" rich in phosphorus. This "leaf tea" flows through storm sewers into local waters and can cause algae blooms, deplete oxygen levels and reduce water clarity. Outreach efforts such as the "Love Your Lakes and Rivers, Don't Leaf Them" campaign have helped raise awareness around the issue asking residents to keep leaves out of the streets to protect Dane Co. waters. The City of Middleton Neighborhood Leaf Pilot aims to build off the success of the Love Your Lakes and Rivers, Don't Leaf Them campaign and other community-focused social marketing studies such as the Clean Lakes Alliance (CLA) DeForest Leaf-free Street Pilot and the Lake Wingra/City of Madison Leaf Pilot to keep leaves out of the street.

The Madison Area Municipal Stormwater Partnership (MAMSWaP) partnered with the City of Middleton and Friends of Pheasant Branch Conservancy (FOPB) on this pilot. The goal of the City of Middleton Neighborhood Leaf Pilot was to enlist the help of residents to remove leaves from streets in front of their home prior to a predicted rain event. The pilot study took place between October 1st and November 30th, 2016 and included two test sites and one control site within the City of Middleton. Residents living within the test area were mailed information about the pilot requesting their participation in September 2016. Interested residents returned a commitment card pledging to remove leaves from the curb and street in front of their home before the rain. Electronic (text or email) rain event alerts were issued to pilot participants 1-2 days prior to a rain event prompting participants to remove street leaves.

FOPB volunteers conducted pre and post storm observational surveys in both the pilot test and control areas to track leaf removal efforts. Following the pilot period, questionnaire surveys were mailed to participants in the pilot test area and to all residents within the control area to further evaluate actions taken during the pilot and predict future actions as a result of the pilot.

Location

MAMSWaP considered several urban locations within the MAMSWaP boundaries for this pilot and ultimately made a decision based on the how well the potential site met the following criteria: presence of large terrace trees, existing leaf management efforts, and the ability to partner with an active local group. The City of Middleton was selected because they met all the criteria and had a very willing and eager partner, the Friends of Pheasant Branch Conservancy.

The pilot area included two test sites and one control site (Figure 1). Test site 1 (Elmwood) was located on Elmwood Ave from Middleton St. to Park Street. Test site 2 (Hubbard) was located on Hubbard Ave. from Middleton St. to Park Street and the control site was located on Hubbard Street from Park Street to S. Gateway St. The pilot area included a total of 153 residences, 48 within the Elmwood Test Site, 47 within the Hubbard Test Site and 58 within in the control site.

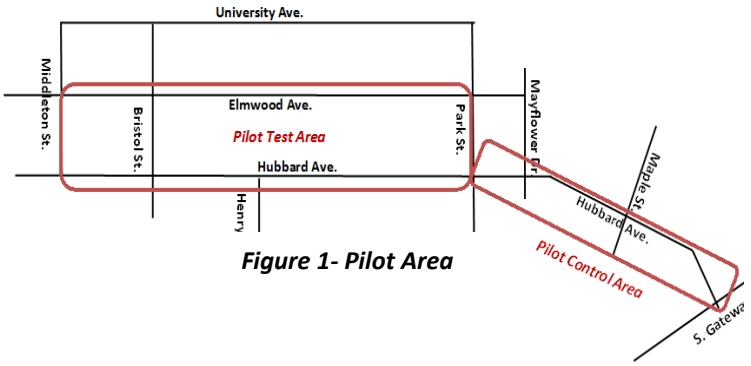


Figure 1- Pilot Area

Methods

Recruitment

A two pronged approach was used to recruit pilot participants. A mailing was sent in mid-September 2016 to each of the 95 residences located in the Elmwood and Hubbard Test Sites followed by door to door visits from Friends of Pheasant

Branch volunteers in late-September. The mailing contained an informational letter from the City of Middleton describing the pilot, a Frequently Asked Questions flyer, a pre-stamped commitment postcard and a coupon for a free cookie from Hubbard Street Diner. See Appendix A for samples of the mailing. The goal was to get as many residents as possible to complete and return the commitment postcard. By completing and returning the postcard residents pledged to remove leaves from the curb and street in front of their home after receiving rain event action alerts from October 1st through November 30th.

FOPB volunteers made door to door visits to each of the residences to answer any remaining questions and encourage residents to participate in the pilot. In the event that residents weren't home or didn't answer, volunteers left door bags with a copy of the flyer and commitment card. As a result of the mailings and visits, 37 of the 95 residents (39%) contacted pledged to participate in the pilot.

All pilot participants were contacted via email or phone with additional instructions, thanking them for their pledge and asking whether they'd prefer to receive rain event alerts via text or email. 54% of participants opted for email alerts and 46% opted to receive text alerts. Participants were also given the option to post a sign in the terrace in front of their home after alerts were issued to serve as a reminder for neighbors to remove leaves and/or report back after leaves were removed using an online "Adopt-A-Street" tool. Only 10 residents requested signs and of the 18 participants who signed up to use the Adopt-A-Street reporting tool, on average only seven used it.

Rain Event Notifications

During the pilot period, October 1st- November 30th, weather forecasts were monitored daily to determine when to issue rain event alerts. Weather for Middleton, Wisconsin was checked using the National Weather Service Hourly Weather Forecast web site http://forecast.weather.gov/MapClick.php?lat=43.0972&lon=-89.5043&unit=0&lg=english&FcstType=graphical between 7 and 9AM. If the 48-hour forecast predicted a 50% chance or greater of at least a ¼ inch of rain a rain event alert was issued to pilot participants. Whenever possible, alerts were issued 2 days in advance of a rain event to give residents ample time to remove leaves from the street. See Appendix B for samples of text and email rain event alerts.

Observational Surveys

FOPB volunteers conducted pre and post-observational leaf surveys before and after rain events to track the amount of street leaves in front of each home in both the test and control areas. The observational surveys served as an evaluation tool to help determine if participants were taking action and removing leaves after receiving rain event alerts.

In an effort to accurately measure street leaf loads before and after the rain, volunteers tried to conduct pre-surveys as soon after a rain event alert was issued as possible before residents took action. Similarly, post-surveys were completed as soon after the rain as possible. The pilot coordinator also coordinated city leaf pick-ups with the City of Middleton streets department to ensure that leaves were not picked-up between the time when an alert was issued and the predicted rain event.

To estimate the amount of street leaves volunteers compared the quantity of leaves observed in front of each home within the two test areas and control area with a leaf photo index (Figure 2). Depending on the amount of leaves observed in the street, volunteers assigned each home a value of 0-5 which correlated to the photo index categories. Leaf survey values were recorded on a spreadsheet before and after each rain event for every home in the test and control areas.

Category 0 =< 1 lb.

Category 1 = 5 lbs.

Category 2 = 14 lbs.

Category 3 = 26 lbs.

Category 4 = 35 lbs.

Category 5 = 50 lbs.

Figure 2. Leaf Photo Index Categories.

The leaf photo index was developed as part of A Quick Guide to Surveying the Quantity of Leaves in the Street by Roger Bannermann. The guide was modified slightly for this pilot, but the photo index remained same. See Appendix C for copy of the City of Middleton Neighborhood Leaf Pilot Guide to Surveying Quantity of Leaves in the Street. All volunteers were trained on survey methods prior to conducting surveys. In an effort to ensure volunteers were consistent in how they surveyed leaf loads, two or more volunteers surveyed the same street in early October and compared leaf load ratings.

Results

Observational Surveys

37 residents (39%) within the test area returned commitment cards pledging to participate in the pilot. 19 participants live on Elmwood Ave./Middleton St. in Test Site 1 and 18 live on Hubbard Ave. in Test Site 2. During the pilot period seven rain event alerts were issued to participants prompting them to remove leaves from the street (Table 1). FOPB conducted pre and post-surveys for five of the seven rain events. October 13th post-surveys were used to estimate pre-survey leaf loads for the Oct. 15th rain event due to short time between rainfalls and no surveys were completed during the Thanksgiving holiday weekend.

Table 1. Summary of Rain Event Alerts, Rain Events, Observational Surveys and Leaf Collection Dates.

Alert Sent Date	Rain Event Date	Pre-survey Date	Post-survey Date	City Leaf Collection Date
10/4 - 8:31 AM	10/6	10/4-Hubbard 10/4-Elmwood 10/4-Control	10/7-Hubbard 10/6- Elmwood 10/7-Control	**NONE**
10/10 - 10:45 AM	10/12	10/11-Hubbard 10/10- Elmwood 10/11-Control	10/13-Hubbard 10/13- Elmwood 10/13-Control	10/10 8AM
10/14 - 10:16 AM	10/15	No survey used 10/13 data	10/16-Hubbard 10/16- Elmwood 10/16-Control	10/17 8AM
10/23 – 8:27 AM	10/25-27	10/24-Hubbard 10/23-Elmwood 10/24-Control	10/27-Hubbard 10/27-Elmwood 10/27-Control	10/28 8AM
10/31 – 8:12 AM	11/2	11/1-Hubbard 10/31-Elmwood 10/31-Control	11/3- Hubbard 11/3-Elmwood 11/3-Control	11/4 8AM
11/21 – 7:10 AM	11/22-23	None	None	**NONE-Thanksgiving**
11/26 – 4:07 PM	11/27-28	11/27-Hubbard 11/27-Elmwood 11/27-Control	11/29-Hubbard 11/28-Elmwood 11/28-Control	11/30 8AM

As noted in Table 1 the City of Middleton streets department did not pick up leaves between the time when a rain alert was issued until after post-surveys were completed. This allowed volunteers to accurately measure the amount of leaves in front of homes on the streets before and after the rain event helping to determine if residents removed street leaves during that time.

Volunteers were each assigned an area to survey (Test Site 1- Elmwood, Test Site 2- Hubbard and the Hubbard Control Site) for the duration of the pilot. Whenever possible the same volunteer conducted all surveys in their assigned area; however there were occasions when volunteers were unable to conduct surveys for their designated area and other trained volunteers filled in.

Survey results did not reveal a significant difference in the amount of post-storm street leaves observed in front of homes belonging to the participant group and the non-participant group within the test area (Figures 3 and 4). Similarly, it was difficult to identify a significant difference in the reduction of street leaves between the pre and post storm surveys when comparing the participant group to the non-participant group. Volunteers did see evidence of residents removing leaves after rain even alerts were issued. They reported observing residents out raking leaves from the streets while conducting pre-storm surveys and saw small piles of leaves on terraces. Normally, larger leaf piles were present if yards were raked onto the terrace for pick up. Volunteers also reported that street leaves blew easily and likely moved between the 2-3 day period when pre and post-storm surveys were completed often piling up at storm drain inlets

following the rain. It's likely some pilot participants removed leaves from the streets beyond their property boundaries and other non-participants may have occasionally removed street leaves even though they didn't officially sign up for the pilot. These factors made it difficult to accurately measure changes in street leaf loads from one home to the next.

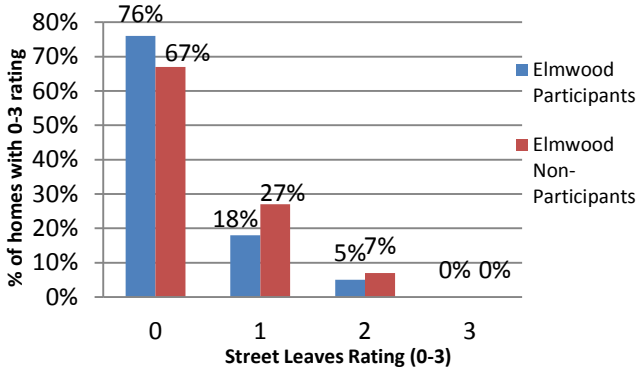


Figure 3. Comparison of post-storm street leaves- Elmwood Ave Pilot Area (Oct. 6th- Nov. 29th)

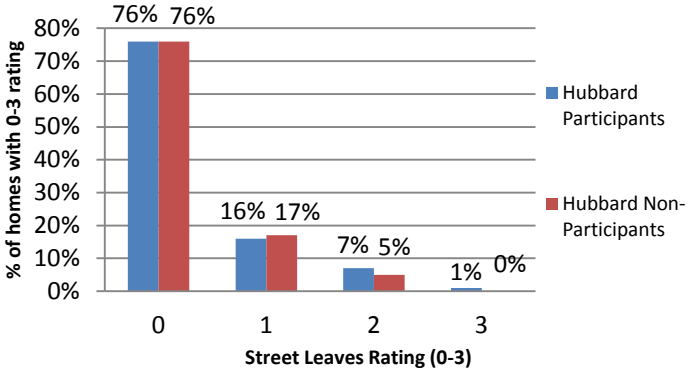


Figure 4. Comparison of post-storm street leaves- Hubbard Ave Pilot Area (Oct. 6th- Nov. 29th)

A comparison of post-storm street leaves between the test area and the control area as a whole told a different story (Figure 5). The percentage of homes with a 0 post-storm leaf rating (none or very few leaves present) is about 25% higher in the test area where about 40% of residents actively participated in the pilot compared to the control area. Similarly, the test area has a lower percentage of 1, 2, and 3 post-storm leaf ratings than the control area indicating less leaves were present in the streets overall in the test area. Mean street leaf ratings for each rain event were also lower in the test area compared with the control area (Figure 6) suggesting that residents in the test area were actively removing street leaves. Volunteers did not record any 4 or 5 leaf ratings likely due to the fact that there was a dry period between mid and late November when a significant amount of leaves fell, but no alerts were issued or observational surveys completed . Complete pre and post-storm observational survey results for pilot and control area are available in Appendix D.

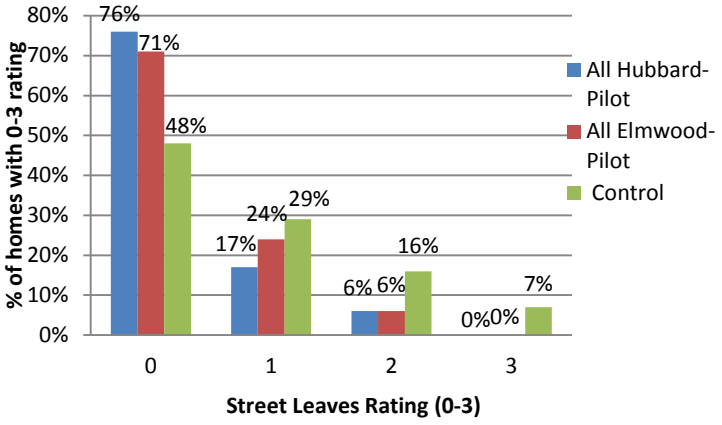


Figure 5. Comparison of post-storm street leaves- Pilot vs. Control Areas (Oct. 6th- Nov. 29th)

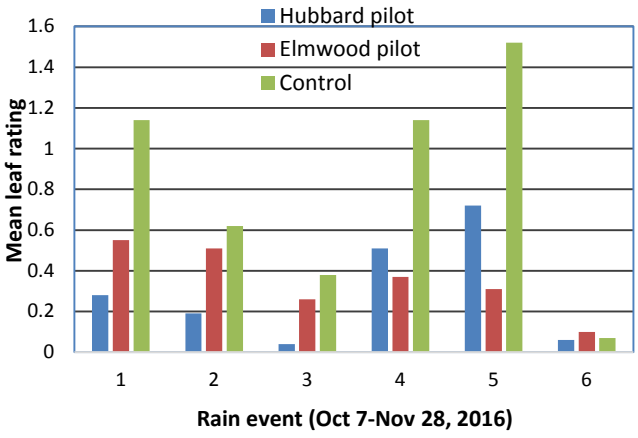


Figure 6. Mean street leaf rating by rain event

Participant Survey

All pilot participants in the test area (37) were mailed a 15 question survey (Appendix F) in December 2016 following the completion of the pilot on November 30th. 24 (65%) of pilot participants completed and returned the online (9) or paper

(15) version of the survey. The purpose of the survey was to measure past and future actions taken by participants, motivators and barriers to street leaf removal and overall thoughts about the pilot experience. Highlights from the survey are presented in the figures below (Figures 7-14). See Appendix E for a copy of the participant survey mailing and complete survey results.

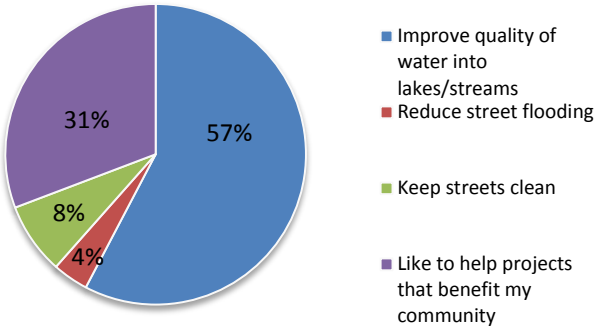


Figure 7. Participant Survey Question 3
What was the main reason you signed up to participate in pilot?

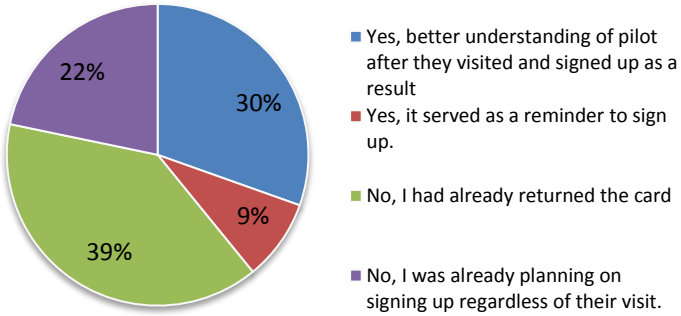


Figure 8. Participant Survey Question 4
Did the Friends of Pheasant Branch play a role in your decision to sign up for the pilot?

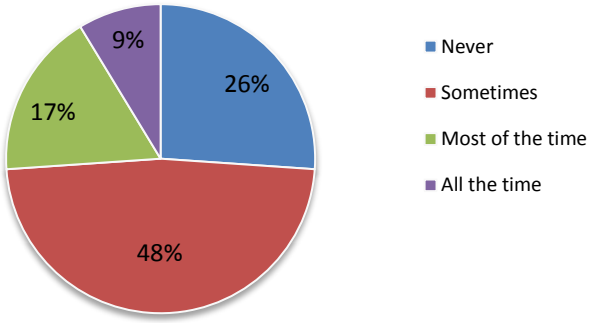


Figure 9. Participant Survey Question 5
Before the pilot, did your actively remove leaves from your street in the fall?

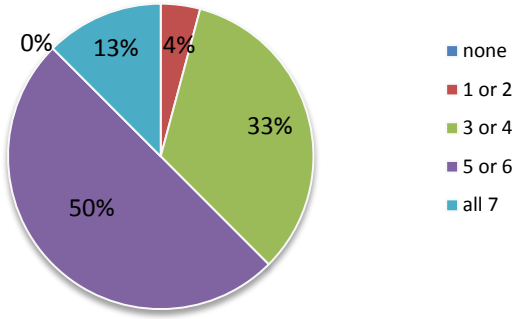


Figure 10. Participant Survey Question 8
For how many of the rain events for which action alerts were issued did you attempt to remove leaves from the street?

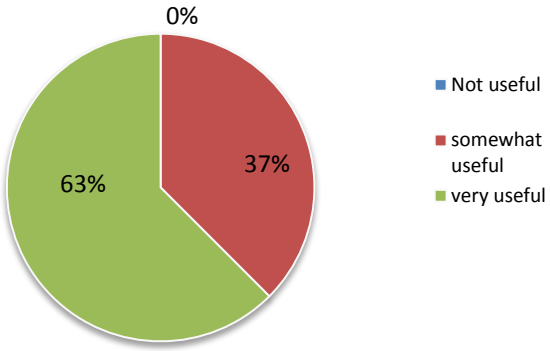


Figure 11. Participant Survey Question 9
How useful were the rain event alerts in helping you to take action and remove leaves from the streets?

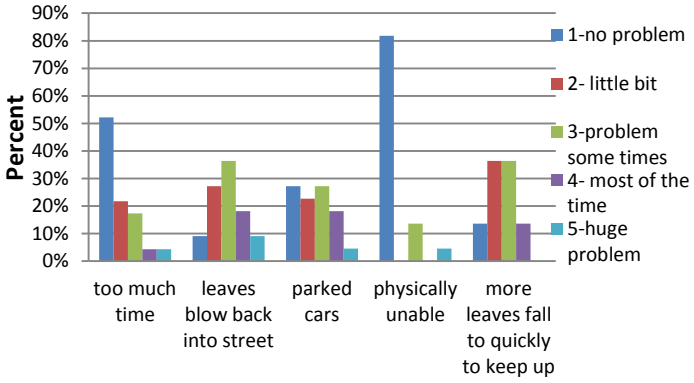


Figure 12. Participant Survey Question 11
Barriers to removing leaves prior to a rain event

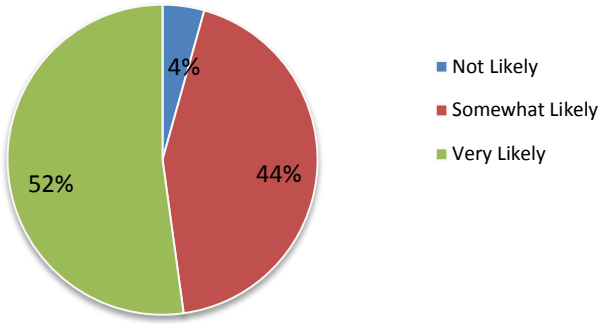


Figure 13. Participant Survey Question 13
How likely are you to continue to remove leaves from the street before a rain event next fall?

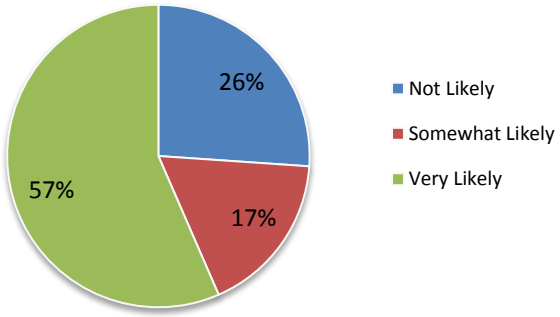


Figure 14. Participant Survey Question 14
How likely are you to sign up to continue to receive rain event alerts, if given the opportunity?

Control Survey

Residents (56) in the control area were mailed an 11 question survey in December 2016. 20 (36%) of residents in the control area completed and returned the online (2) or paper (18) version of the survey. The control survey was used to determine baseline knowledge on the impacts of leaves on water quality, identify current actions residents may be taking and compare future leaf management efforts between pilot participants and those not involved in the pilot. Highlights from the survey are presented in the figures below (Figures 15-19). See Appendix F for a copy of the control survey mailing and complete survey results.

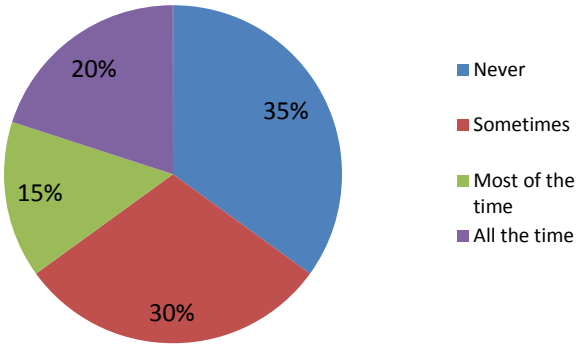


Figure 15. Control Survey Question 4
Did you actively remove leaves from the street this fall?

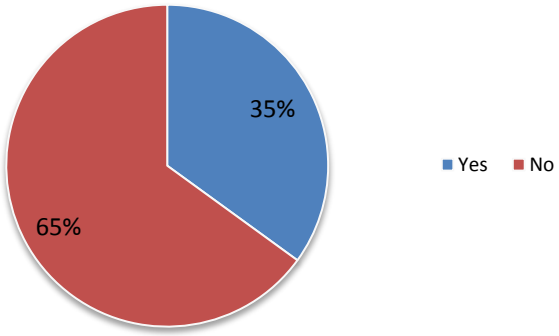


Figure 16. Control Survey Question 5
Before receiving this mailing did you know street leaves were a main source of phosphorus from the urban environment to our waters?

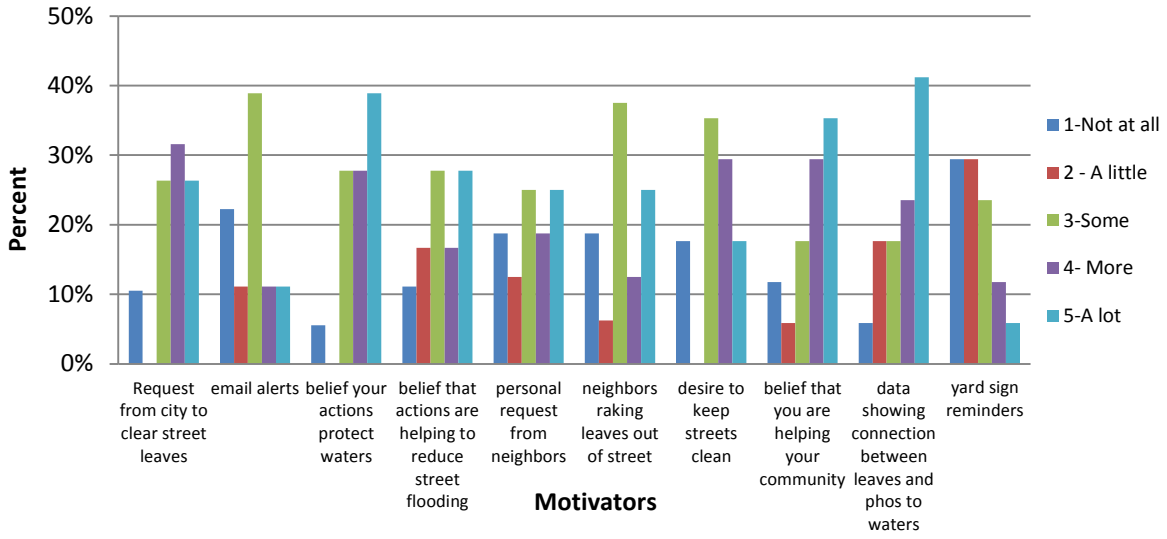


Figure 17. Control Survey Question 8-Motivators to remove leaves from streets next fall

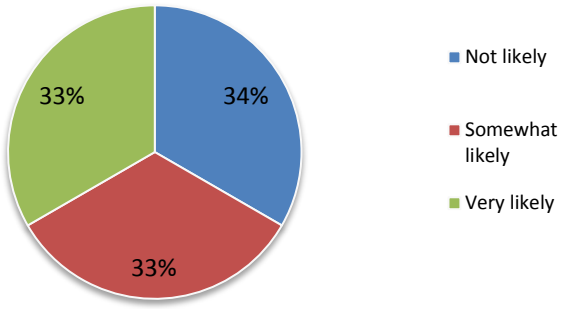


Figure 18. Control Survey Question 9- After learning about this pilot and the impact leaves in the street during a rain event can have on our waters, how likely are you to remove leaves from the street before a rain event next fall?

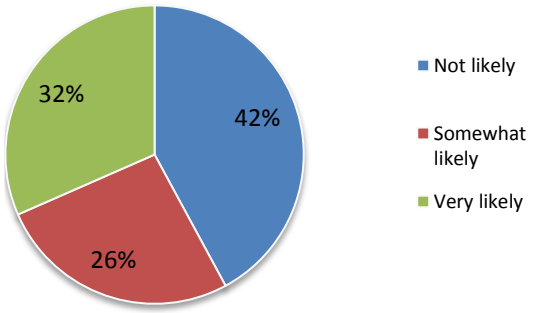


Figure 19. Control Survey Question 10
Given the opportunity how likely would you be to sign up to receive rain event action alerts reminding you when to remove street leaves next fall?

Observations and Conclusions

1. Targeted mailings coupled with door to door visits by local environmental or neighborhood groups appear to be effective in engaging residents in street leaf removal efforts.
2. Rain event alerts can serve as useful tool to engage residents in street leaf removal efforts.
3. Engaging residents in a pilot project is an effective approach to getting residents to continue leaf removal efforts.
4. Residents become frustrated when terrace leaves are not picked up often enough and grass under piles dies.
5. Areas with heavy street parking make it difficult for city crews to pick up leaves in a timely manner causing residents who do remove street leaves to get discouraged.
6. Leaves often blow around and are washed down the street by the rain making it difficult to accurately quantify changes in volume of street leaves in front of specific homes before and after a rain event.

Recommendations

1. Partner with a local environmental or neighborhood group on outreach efforts aimed at getting residents to remove street leaves before the rain.
2. Clearly communicate the impact street leaves can have on surface waters and provide data as part of outreach efforts.
3. Create an automated county-wide rain event alert tool residents can sign up for to remind them when to remove leaves from the streets.
4. Focus resident street leaf removal efforts in densely populated urban areas with large deciduous terrace trees.
5. Consider more frequent municipal leaf pick-ups in areas where resident leaf removal campaigns are targeted as an incentive for participation.
6. Partner with municipalities to create alternate side parking plans in areas where street parking is common to allow time for municipal street crews to pick up leaf piles on terrace in a timely manner.
7. Consider options to recognize residents who are actively removing street leaves in a way that is visible to neighbors.

Thank you to the City of Middleton and the Friends of Pheasant Branch volunteers for all their help with this pilot project.

For more information on the City of Middleton Neighborhood Leaf Pilot contact Christal Campbell, Dane County Land and Water Resources Dept./Madison Area Municipal Stormwater Partnership campbell.christal@countyofdane.com, (608) 224-3746.

Appendix A- Pilot Mailing

Informational Letter

DEPARTMENT OF PUBLIC WORKS
DIRECTOR / CITY ENGINEER

CITY OF MIDDLETON
7426 HUBBARD AVENUE
MIDDLETON, WI 53562-3118

PH 608.821.8381 FAX 608.827.1080
E-MAIL: sstauske@cityofmiddleton.us
WEB: www.CityofMiddleton.us

September __, 2016

Name
Address

Middleton, WI 53562

Re: Neighborhood Leaf Pilot Study

The City of Middleton is partnering with the Friends of Pheasant Branch Conservancy and others in a pilot study to improve the quality of storm water runoff within the Pheasant Branch Creek and Lake Mendota watershed through improved leaf management. Portions of Hubbard Ave. and Elmwood Ave. are in the study area and we're asking for your participation. **The goal is to enlist the help of residents to remove leaves from the street and storm drains in front of their home before predicted rain events.** The study will take place between October 1st and November 30th, 2016. Results will be used by the county and other partners to help develop a citizen engagement model for leaf management.

In urban environments with lots of trees, leaves are a major source of phosphorus that contributes to high phosphorus levels in area waters. Phosphorus, while naturally occurring and essential to plant growth, can be harmful to our lakes, rivers, and streams. Excessive phosphorus can lead to toxic algae blooms, low oxygen levels and reduced water clarity that affect both aquatic life and recreational opportunities. In the fall, storm water that flows through leaves in streets creates a "leaf tea" that is rich in dissolved phosphorus. The phosphorus present in this "leaf tea" cannot be removed through traditional storm water treatment practices and is carried through storm sewers to Pheasant Branch Creek and Lake Mendota. The City of Middleton is actively involved in many efforts to improve the quality of storm water runoff; however we don't have the staff or equipment to remove leaves from streets prior to every rain event. **We need your help. Please consider joining your neighbors in this effort to protect the waters in our community.**

For more information on the Neighborhood Leaf Pilot or to sign up to participate, please read the attached flyer or contact Christal Campbell at campbell.christal@countyofdane.com, (608) 224-3746. We will be going door-to-door in late September to answer any remaining questions you may have.

Thank you in advance for your participation.

Sincerely,

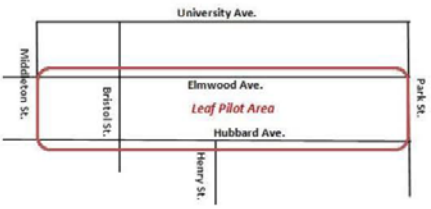
Shawn Stauske

Shawn Stauske
Dir. Public Works / City Engineer

encl: Program Flyer – 2016 Neighborhood Leaf Pilot study
Commitment Postcard – 2016 Neighborhood Leaf Pilot study

Leaves OUT OF THE STREET

2016 City of Middleton Neighborhood Leaf Pilot



What is the goal of the pilot study?

To enlist the help of residents to remove leaves from the street and storm drains prior to a rain event.

Why be concerned with leaves?

Decaying leaves are a primary source of phosphorus in urban environments with mature trees. When it rains, water runs through leaves in streets creating a "leaf tea" rich in phosphorus. This "leaf tea" flows through storm sewers into local waters and can cause algae blooms, deplete oxygen levels and reduce water clarity.

REMOVE LEAVES, THEN:

PILE NEATLY,

OR MULCH,

OR COMPOST

How can I help?

Sign up to participate in the pilot by completing and mailing the enclosed commitment card.

Receive email or text alerts 2 days prior to a forecasted rain event (50% or greater chance of a 1/4 inch rain fall) reminding you to take action. Signs will also be placed along the street alerting you when to remove leaves.

Remove leaves from street within 5 feet of the curb and any storm drains in front of your property before it rains from **Oct. 1st—Nov. 30th**. The goal is to have leaf-free streets, curbs and storm drains before the rain.

Pile collected leaves neatly onto the terrace to keep them from falling back into the street, OR **Mulch** leaves into lawn OR **Compost** leaves. Leaf piles on terrace will be collected later by city crews.

What is the time commitment?

Based on past rainfall data the City of Middleton normally experiences between 2 and 6 quarter inch or more rainfall events between Oct. 1st and Nov. 30th. This number obviously varies quite a bit from year to year, but will give you an estimate as to how many times we may be sending out requests to remove leaves. We will also ask participants to complete a short survey on their experience following the pilot.

What if I'm not home during a rain event?

We realize that there may be days when you are out of town, etc. during which time an action alert is issued and you are unable to remove the leaves from the street prior to a rain event. We just ask that you do the best you can to remove leaves before most rain events.

How will the pilot be evaluated?

Following a rain event trained volunteers will be walking around the pilot area to observe whether or not leaves were removed from the streets. A final report will be completed in January 2017 and shared with all pilot participants.

Questions? Contact Christal Campbell at campbell.christal@countyofdane.com, 608-224-3746.

Middleton · The Friends of Pheasant Branch Conservancy · Clean Lakes Alliance · County of Dane Wisconsin · myfairlakes.com

Commitment Postcard

Leaves OUT OF THE STREET

Help protect our waters and join the City of Middleton Neighborhood Leaf Pilot!

☐ *Yes! I pledge to remove leaves from the curb and street in front of my home after receiving a rain event action alert between* ***October 1st and November 30th, 2016*** *as I am able.*

Please provide the following information and indicate your preference for communication*. **Return postcard by September, 30th**.

Full Name_____

Address_____

Email address _____

Phone (cell)_____

Check preferred method for action alerts: ☐ email ☐ cell/text

*Contact information will only be used to communicate information for this pilot and will not be shared with any other party.

Appendix B- Rain Event Alerts

Sample Text Alert

Rain Action Alert-Wed. Actionable rain event predicted for Wed 11/2. Please remove leaves from street and storm drains on Tues. evening or as close to the time leading up to the rain event as possible. Report back after leaves are removed by logging into https://dcimapapps.countyofdane.com/adoptastreet. Thank you! -Christal Campbell

Sample Email Alert

From: Campbell, Christal [mailto:Campbell.christal@countyofdane.com]
Sent: Sunday, October 23, 2016 8:27 AM
To: Campbell, Christal
Subject: RAIN ACTION ALERT- Tues. through Thurs. AM (10/25-27)
Importance: High

Large volume of rain predicted for Tuesday **(10/25)** through Thursday morning **(10/27)**. Please remove leaves from the street and storm drains on Monday evening or as close to the time leading up to the rain event as possible.

1. ***Remove leaves*** *from street within 5 feet of the curb and any storm drains in front of your property before it rains. The goal is to have leaf-free streets, curbs and storm drains before the rain.*
2. ***Pile*** *collected leaves neatly onto the terrace to keep them from falling back into the street, OR* ***Mulch*** *leaves into lawn OR* ***Compost*** *leaves. Leaf piles on terrace will be collected by city crews.*
3. *Remember to* ***report back*** *once you have removed leaves using the Adopt A Street- Leaf Pilot tool, if possible. See instructions below.*

If you haven't adopted your street section in front on your home yet, visit https://dcimapapps.countyofdane.com/adoptastreet/, login with your email address, click on the leaf icon in front of your home and press the **Adopt** button. You will now be able to report back when you take action, by checking the circle marked "leaves removed".

As always, feel free to contact me with any questions. Thank you!

Christal Campbell
Madison Area Municipal Stormwater Partnership (MAMSWaP)
Stormwater Education Coordinator
Dane County Water Resource Engineering
(608) 224-3746
campbell.christal@countyofdane.com
www.myfairlakes.com

"like" us on Facebook: http://www.facebook.com/myfairlakes

Appendix C – City of Middleton Neighborhood Leaf Pilot Guide to Surveying Quantity of Leaves in Street

A Quick Guide to Surveying the Quantity of Leaves in the Street
City of Middleton Neighborhood Leaf Pilot

Background

Rain water running through leaves in our streets is an important source of phosphorus to our lakes. Phosphorus leached from leaves in the fall can contribute as much as 60 percent of the annual phosphorus load from our cities residential areas. Keeping the leaves out of the streets in the fall has the potential of helping our cities meet their phosphorus reduction goals. An important step in earning credit for selected leaf management programs is to demonstrate their ability to reduce the phosphorus loads from the streets in the fall.

Purpose

The purpose of surveying the quantity of leaves in the streets is to compare the ability of different leaf management programs to keep the leaves out of the streets in the fall.

Approach

The survey is based on a visual survey of the amount of leaves in the street in front of each house. A separate calibration process has divided the amount of leaves in the street into six categories. Each category represents a different weight of leaves ranging from zero pounds to over 40 pounds. For example, a category 2 curb and street just has leaves filling the curb and none in the street (Appendix 1). The person doing the survey has to select the appropriate category based on the inspection of the amount of leaves in the curb and street. A post-rain street survey should be conducted as soon as possible after an actionable rain event takes place from October 1st through November 30th. If possible, a pre-rain street survey should be conducted on the same date as an action alert is issued to residents in the study area.

Field Methods

A spread sheet has been prepared with a line for each house number and a column for entering the category for each house (Appendix 2). The spread sheet should be saved on a laptop for use during surveys. One person fills out the spread sheet as another person slowly drives a car up and down each side of the street. A separate column is available for each survey date. It is not expected that there is perfect category for every amount of leaves observed in front of a house. The person filling out the spread sheet will have to make his or her best judgement using the photographs provided in Appendix 1.

Appendix 1

Category 0 = < 1 lb.

Category 1 = 5lbs.

Category 2 = 14 lbs.

Category 3 = 26 lbs.

Category 4 = 35 lbs.

Category 5 = 50 lbs.

Appendix 2

City of Middleton Leaf Pilot Survey Sheet

Address	Event 1 (DATE) Pre-Storm Survey- Leaf Load (0-5)	Event 1 (DATE) Post-Storm Survey- Leaf Load (0-5)

Appendix D- Pre and Post-Storm Observational Leaf Survey Results

SURVEY SHEET FOR RECORDING LEAF OBSERVATIONS- HUBBARD AVE PILOT SITE

Grey shaded addresses-pilot participants

Address	Event 1 Pre 10/04	Event 1 Post 10/07	Event 2 Pre 10/11	Event 2 Post 10/13	Event 3 Pre	Event 3 Post 10/16	Event 4 Pre 10/24	Event 4 Post 10/27	Event 5 Pre 11/1	Event 5 Post 11/3	Event 6 Pre 11/27	Event 6 Post 11/29
South side					used 10/13 survey							
7326 Hubbard Ave.	0	0	0	0	0	0	0	1	0	0	0	0
7322 Hubbard Ave	0	0	0	0	0	0	0	0	0	**0**	0	0
7318 Hubbard Ave.	0	0	0	0	0	0	0	0	**0**	**0**	0	0
7314 Hubbard Ave	0	0	0	0	0	0	0	0	0	0	0	0
7310 Hubbard Ave.	0	0	0	0	0	0	0	0	0	0	0	0
7306 Hubbard Ave.	0	0	0	0	0	0	0	0	0	0	0	0
7302 Hubbard Ave.	0	0	0	0	0	0	0	0	0	0	0	0
7226 Hubbard Ave.	0	0	0	0	0	0	0	0	0	0	0	0
7222 Hubbard Ave.	0	0	0	0	0	0	0	1	**0**	0	**0**	**0**
7214 Hubbard Ave	0	0	0	1	1	1	**1**	**2**	**0**	**0**	0	0
7206 Hubbard Ave.	0	0	0	0	0	0	**0**	**0**	0	0	**0**	**0**
7208 Hubbard Ave.	0	0	0	0	0	0	1	0	0	0	0	0
7138 Hubbard Ave.	0	0	0	0	0	0	0	**1**	0	1	0	0
7128 Hubbard Ave.	0	0	0	0	0	0	1	**0**	0	**2**	0	0
7120 Hubbard Ave.	0	0	0	0	0	0	1	**1**	1	1	0	0
7112 Hubbard Ave.	1	1	0	1	1	1	**0**	**0**	1	1	0	0
7106 Hubbard Ave	1	1	1	0	0	0	**0**	**1**	**2**	**1**	**0**	**0**
7102 Hubbard Ave.	0	1	1	0	0	0	0	**0**	**2**	**2**	**0**	**0**
7032 Hubbard Ave.	0	0	0	0	0	0	1	2	**1**	**2**	0	0
7028 Hubbard Ave.	0	0	0	0	0	0	**1**	**0**	2	2	**0**	**0**
7022 Hubbard Ave.	0	0	1	0	0	0	0	1	1	1	1	1
7018/7016 Hubbard Ave.	0	0	0	0	0	0	0	0	**2**	**2**	0	0
7014 Hubbard Ave	1	0	0	0	0	0	0	**0**	**1**	**1**	0	0
7010 Hubbard Ave.	0	0	0	0	0	0	**0**	**1**	**1**	**1**	0	0
7006 Hubbard Ave.	0	0	0	0	0	0	2	**1**	**1**	**1**	0	0
7002 Hubbard Ave	1	1	0	0	0	0	2	**2**	2	3	0	0

Address	Event 1 Pre 10/04	Event 1 Post 10/07	Event 2 Pre 10/11	Event 2 Post 10/13	Event 3 Pre	Event 3 Post 10/16	Event 4 Pre 10/24	Event 4 Post 10/27	Event 5 Pre 11/1	Event 5 Post 11/3	Event 6 Pre 11/27	Event 6 Post 11/29
Northside of Street												
7005 Hubbard Ave.	1	1	1	1	1	0	3	**1**	2	2	0	0
7011 Hubbard Ave	1	1	1	1	1	0	3	**1**	1	2	**1**	**1**
7017/7019 Hubbard Ave.	0	1	0	0	0	0	1	0	1	2	0	0
7021 Hubbard Ave.	0	1	1	1	1	0	1	1	2	2	**2**	**1**
7029 Hubbard Ave.	0	0	0	0	0	0	1	0	**1**	**1**	0	0
7033/7031 Hubbard Ave.	1	1	0	0	0	0	2	0	1	1	**1**	**0**
7037 Hubbard Ave.	0	2	2	2	2	0	2	2	1	1	0	0
7111 Hubbard Ave.	1	1	1	1	1	0	**1**	**0**	**2**	**2**	0	0
7115 Hubbard Ave.	1	1	0	1	1	0	3	2	1	0	0	0
7119 Hubbard Ave.	1	0	0	0	0	0	1	0	0	0	0	0
7123 Hubbard Ave	1	0	0	0	0	0	**1**	**1**	**0**	0	0	0
7127 Hubbard Ave.	0	0	0	0	0	0	1	**0**	1	0	0	0
7133 Hubbard Ave	0	0	0	0	0	0	2	1	1	0	**0**	**0**
1740 Henry St.	0	0	0	0	0	0	1	0	0	0	0	0
7207 Hubbard Ave	0	0	0	0	0	0	1	0	0	0	0	0
7215 Hubbard Ave.	0	0	0	0	0	0	1	1	0	0	0	0
7221 Hubbard Ave.	0	0	0	0	0	0	**1**	**0**	0	0	0	0
7225 Hubbard Ave	0	0	0	0	0	0	0	0	0	0	0	0
7303 Hubbard Ave.	0	0	0	0	0	0	0	0	1	0	0	0
7307 Hubbard Ave.	0	0	0	0	0	0	0	0	0	0	0	0
7311 Hubbard Ave.	0	0	0	0	0	0	**0**	**0**	0	0	0	0
	# no leaves raked on terrace, street sweeper probably went through day before	0.50" rain overnight, no leaves raked on terraces, runoff in gutter had washed away some leaves	street fairly clean; no leaves raked on terraces; sign at 7318; event rain = 0.31"	no leaves raked on terraces; sign at 7318; event rain = 0.31"		street very clean, maybe sweeper went through after last storm. 1.06" rain from night before.	leaf piles raked at 10 residences (ratings given in bold) where ratings were 0 or 1; sign at 7029	leaf piles raked at 20 residences (ratings given in bold). 2.55 inches rain 10/26	13 leaf piles on terrace (rating in **bold**), street not swept. Sign at 7318	13 leaf piles on terrace (rating in **bold**). Sign at 7318. 0.18 " rain on 10/2	8 leaf piles on terrace (rating in **bold**), street not swept. No signs	8 same leaf piles on terrace (rating in **bold**). 1.22 " rain 11/27-11/28

SURVEY SHEET FOR RECORDING LEAF OBSERVATIONS- ELMWOOD AVE PILOT SITE

Grey shaded addresses-pilot participants

Address	Event 1 Pre- 10/4	Event 1 Post 10/6	Event 2 Pre 10/10	Event 2 Post 10/13	Event 3 Pre- NO SURVEY 10/13	Post Event 10/16	Event 4 Pre 10/23	Leaf Pile	Event 4 Post 10/27	Leaf Pile	Event 5 Pre 10/31	Leaf Pile	Event 5 Post 11/3	Leaf Pile	Event 6 Pre 11/27	Com- ment	Event 6 Post 11/28	Com- ment
South side																		
7328 Elmwood	0	0	0	0	0	0	0	X	1	X	1		2		0	leaf pile	0	leaf pile
7320 Elmwood	0	0	0	0	0	0	0	X	0	X	0	X	0	X	0		0	
7316 Elmwood	0	0	0	0	0	0	0	X	0	X	0	X	0		0	stick pile	0	stick pile
7310 Elmwood	0	0	0	0	0	0	0	X	1	X	1	X	1	X	0		0	
7306 Elmwood	0	0	0	0	0	0	0	X	1		0	X	1	X	1		0	cleaned up since yesterday !
7302 Elmwood	0	0	0	0	0	0	0		1		0		0		1	stick pile	0	cleaned up since yesterday !, stick pile
1903 Bristol St.	1	0	0	0	0	1	0	X	0		0		0		1		1	
7232 Elmwood	2	0	0	0	0	1	0		2		1		1		1		1	maple leaves still falling
7228 Elmwood	2	1	0	1	1	1	0		1	X	0	X	0	X	0		0	
7224 Elmwood	2	1	0	1	1	0.5	0	X	0	X	0		0		0	stick pile	0	stick pile
7220 Elmwood	2	0	0	1	1	0.5	0	X	0	X	0		0		0		0	
7216 Elmwood	0	1	0	1	1	0.5	0	X	0	X	0		0	X	0		0	
7212 Elmwood	2	1	0	2	2	1	0	X	0	X	1		0	X	1	leaf pile & stick pile	0	leaf pile & stick pile, clean up since Yes.
7208 Elmwood	1	1	0	2	2	0.5	0		0	X	1		0		0		0	

Address	Event 1 Pre-10/4	Event 1 Post 10/6	Event 2 Pre 10/10	Event 2 Post 10/13	Event 3 Pre- NO SURVEY 10/13	Post Event 10/16	Event 4 Pre 10/23	Leaf Pile	Event 4 Post 10/27	Leaf Pile	Event 5 Pre 10/31	Leaf Pile	Event 5 Post 11/3	Leaf Pile	Event 7 Pre 11/27	Com-ment	Event 7 Post 11/28	Com-ment
7204 Elmwood	0	1	0	0	0	0.5	1		0		0		0		0	stick pile	0	stick pile
7114 Elmwood	0	0	0	0	0	0	0	X	0	X	0		0		0		0	
7104 Elmwood	0	0	0	0	0	0	0	X	0	X	0	X	0	X	0	stick pile	0	stick pile
7102 Elmwood	0	0	0	0	0	0	0	X	0	X	0	X	0	X	0	stick pile	0	stick pile
7028 Elmwood	1	0	0	1	1	1	0	X	2	X	1	X	1	X	0		0	
7024 Elmwood	2	0	1	2	2	1	0	X	0	X	0	X	2	X	0		0	
7020 Elmwood	2	1	1	2	2	1	0	X	0	X	0		0	X	0	stick pile	0	stick pile
7016 Elmwood	2	2	0	2	2	0.5	0		0	X	0		0	X	0	leaf pile	0	leaf pile
7008 Elmwood	2	1	0	0	0	0.5	1		1		1		0		0	stick pile	0	stick pile
7002 Elmwood	0	1	1	1	1	0.5	1		1		0		0	X	0		0	
North side																		
7003 Elmwood	2	1	0	0	0	0.5	1		1		1		1		0		0	
7007 Elmwood	2	2	1	2	2	1	1	X	1	X	2		1	X	0		0	
7017 Elmwood	2	2	1	2	2	0	1		1		2		2		0		0	
7021 Elmwood	2	1	1	1	1	0	0		0	X	0		0		0		0	
7023 Elmwood	2	2	1	1	1	0	0	X	0	X	1	X	0	X	0		0	
7025 Elmwood	2	2	1	1	1	0	0		1	X	1		0		0	stick pile	0	stick pile
7029 Elmwood	0	0	0	0	0	0	1		0	X	0		0		0	leaf pile	0	leaf pile
7103 Elmwood	0	0	0	1	1	0	1		1		2		2		0	stick pile	0	stick pile
7105 Elmwood	0	0	0	0	0	0	0	X	1	X	0	X	0	X	0	huge branch pile	0	huge branch pile
7117 Elmwood	1	0	0	0	0	0	0		0		1	X	1	X	0	sign out	0	sign out
7205 Elmwood	1	2	1	1	1	0.5	1		0	X	0		0		0	stick pile	0	stick pile
7211 Elmwood	1	0	0	0	0	0	0		0	X	0		0	x	0		0	
7213 Elmwood	1	0	0	0	0	0	1		0	X	0		0	x	0		0	

SURVEY SHEET FOR RECORDING LEAF OBSERVATIONS-
HUBBARD AVE CONTROL

Address	Event 1 Pre-Storm (10/4/16)	Event 1 Post-Storm (10/7/16)	Event 2 Pre-Storm (10/11/16)	Event 2 Post-Storm (10/13/16)	Event 3 Pre-Storm NO SURVEY used 10/13	Event 3 Post-Storm (10/16/16)	Event 4 Pre-Storm (10/24/16)	Event 4 post-storm 10/27	Event 5 Pre-Storm 10/31	Event 5 Post-Storm 11/3	Event Pre-Storm 11/27	Event Post-Storm 11/28
South side												
1743 Park St	0	3	1	2	2	1	3	3	2	1	0	0
6909 Hubbard	1	1	0	1	1	0	2	2	1	2	0	0
6827 Hubbard	0	0	0	0	0	0	1	0	0	0	0	0
6821 Hubbard	0	0	0	0	0	0	0	0	0	0	0	0
6811 Hubbard	1	1	1	1	1	0	2	2	3	3	0	0
6805 Hubbard	0	1	0	0	0	0	1	0	0	1	0	0
6715 Hubbard	1	2	0	0	0	0	1	0	0	0	0	0
6709 Hubbard	0	1	0	0	0	0	1	0	1	1	0	0
6703 Hubbard	0	0	0	0	0	0	2	1	1	1	0	0
6621 Hubbard	1	1	0	0	0	0	2	3	2	3	1	1
6617 Hubbard	2	3	2	2	2	2	3	2	1	3	0	0
6613 Hubbard	1	1	0	0	0	0	2	2	0	2	0	0
6609 Hubbard	2	2	0	0	0	0	2	2	0	0	0	0
6603 Hubbard	2	2	0	0	0	0	0	0	0	0	0	0
1715 Maple St	1	1	1	2	2	1	2	2	2	2	1	1
6525 Hubbard	1	2	2	2	2	2	1	1	0	1	0	0
6517 Hubbard	2	3	2	2	2	1	2	2	1	1	0	0
6511 Hubbard	1	3	1	1	1	1	2	1	1	1	0	0
6427 Hubbard	1	2	1	1	1	0	1	0	0	1	0	0
6423 Hubbard	2	2	0	0	0	0	1	0	0	0	0	0
6419 Hubbard	1	1	0	0	0	0	0	0	0	0	0	0
6415 Hubbard	0	0	0	0	0	0	0	0	0	0	0	0
6411 Hubbard	1	0	0	0	0	0	0	2	2	2	0	0
6407 Hubbard	1	1	1	1	1	0	1	0	0	1	0	0
6403 Hubbard	2	2	1	2	2	1	3	2	1	2	0	0
North side												

	Event 1 Pre-Storm (10/4/16)	Event 1 Post-Storm (10/7/16)	Event 2 Pre-Storm (10/11/16)	Event 2 Post-Storm (10/13/16)	Event 3 Pre- NO SURVEY used 10/13	Event 3 Post-Storm (10/16/16)	Event 4 Pre-Storm (10/24/16)	Event 4 post-storm 10/27	Event 5 Pre-Storm 10/31	Event 5 Post-Storm 11/3	Event Pre-Storm 11/27	Event Post-Storm 11/28
1805-07 Park St	1	1	0	0	0	0	1	1	2	1	1	1
6918 Hubbard	1	1	1	1	1	1	1	1	2	2	0	0
6912 Hubbard	1	0	0	0	0	0	1	1	0	2	0	0
6828 Hubbard	1	0	0	0	0	0	0	1	1	3	0	0
6822 Hubbard	1	0	0	0	0	0	1	1	1	2	0	0
6816 Hubbard	1	0	1	1	1	1	0	1	2	2	0	0
6810 Hubbard	1	1	0	0	0	0	0	1	3	2	0	0
6804 Hubbard	1	0	0	0	0	0	0	0	0	0	0	0
6720 Hubbard	2	1	1	1	1	0	0	1	1	1	0	0
6716 Hubbard	1	1	1	1	1	1	0	1	1	2	0	0
6712 Hubbard	0	1	0	0	0	0	0	1	0	3	0	0
6708 Hubbard	1	1	0	0	0	0	1	1	1	2	0	0
6704 Hubbard	1	1	0	0	0	0	0	1	1	1	0	0
6628 Hubbard	0	1	1	1	1	0	0	1	2	2	0	0
6624 Hubbard	1	1	1	1	1	1	2	3	3	3	1	1
6620 Hubbard	1	3	2	3	3	2	3	3	3	3	0	0
6616 Hubbard	1	2	1	1	1	1	3	3	2	2	0	0
6612 Hubbard	1	2	0	1	1	1	2	2	2	3	0	0
6608 Hubbard	1	2	1	1	1	0	1	2	1	2	0	0
6604 Hubbard	1	1	1	1	1	1	0	0	0	0	0	0
6528 Hubbard	1	1	0	0	0	0	2	2	3	3	0	0
6520 Hubbard	1	2	2	2	2	1	1	1	2	2	0	0
6512 Hubbard	1	2	2	1	1	1	1	1	2	2	0	0
6506 Hubbard	1	1	1	1	1	1	1	1	1	2	0	0
6426 Hubbard	1	1	0	0	0	0	1	2	1	3	0	0
6422 Hubbard	1	0	0	0	0	0	0	1	0	3	0	0
6418 Hubbard	0	0	0	0	0	0	0	0	0	0	0	0
6414 Hubbard	0	0	0	0	0	0	0	1	0	0	0	0
6410 Hubbard	0	0	0	0	0	0	0	2	1	2	0	0
6406 Hubbard	1	1	1	1	1	0	1	0	0	1	0	0
6402 Hubbard	1	1	0	0	0	0	1	0	0	1	0	0

Appendix E- Participant Survey Mailing and Results

DEPARTMENT OF PUBLIC WORKS
DIRECTOR / CITY ENGINEER

CITY OF MIDDLETON *PH 608.821.8381* *FAX 608.827.1080*
7426 HUBBARD AVENUE *E-MAIL: sstauske@cityofmiddleton.us*
MIDDLETON, WI 53562-3118 *WEB: www.CityofMiddleton.us*

December ---, 2016

Name
Address
Middleton, WI 53562

Re: Neighborhood Leaf Pilot Study

Thank you for your participation in the City of Middleton Neighborhood Leaf Pilot Study! The pilot period ended on November 30th and we're happy to report that about 40% of the residents contacted returned commitment postcards indicating their participation. During the study period we had seven forecasts that triggered a rain event alert being sent out to participants via e-mail or text. You may have noticed our dedicated Friends of Pheasant Branch volunteers walking up and down the street conducting pre and post-storm leaf surveys to measure leaves in the street before and after each rain storm. The purpose of these surveys was to determine whether residents were able to remove leaves from the street and storm drains between the time when an alert was sent out and the rain fell.

Despite our best efforts, the leaf surveys alone cannot accurately measure resident leaf removal efforts. Our best evaluation tool is actually you. Please complete the enclosed survey to help us determine if and when you were able to remove leaves from the street before the rain. We're also very interested in hearing about any challenges you ran across when attempting to remove leaves from the streets along with suggestions on how we might increase participation in future efforts to make neighborhood streets and storm drains leaf-free before rain events.

It would be very helpful if by Dec. 30th you would be willing to complete and return the enclosed survey or take it online at **http://tinyurl.com/jumbbjn** . Results of the pilot study and surveys will be used by the county and other partners to help develop a citizen engagement model for leaf management, which will be shared with the City of Middleton in early 2017.

Please contact Christal Campbell at campbell.christal@countyofdane.com, (608) 224-3746 with any questions, or if you are interested in receiving a copy of the final report when it's complete.

Thank you again for your support and participation!

Sincerely,

Shawn Stauske

Shawn Stauske
Dir. Public Works / City Engineer

encl: Leaf Pilot Study Survey

City of Middleton Neighborhood Leaf Pilot- Participant Follow-up Survey

Please complete the survey and return it to the City of Middleton using the stamped envelope provided. Thank you again for your time.

1. Gender: (circle) Female Male

2. Age: (circle) <30 31-50 51-69 70+

3. What was the main reason you signed up to participate in the City of Middleton Neighborhood Leaf Pilot? Fill in one circle.

   - o I wanted to improve the quality of the water entering our lakes and streams.
   - o I wanted to reduce street flooding.
   - o I wanted to keep the streets clean.
   - o I like to help with projects that benefit my community.

   Other:

4. Did the visit by the Friends of Pheasant Branch Creek or packet of information they dropped off play a role in your decision to return your postcard and sign up to participate in the leaf pilot? Fill in one circle.

   - o Yes, I had a better understanding of the pilot after their visit and signed up as a result.
   - o Yes, It served as a reminder to sign up.
   - o No, I had already returned by commitment postcard to sign up.
   - o No. I was already planning on signing up regardless of their visit.

   Comment:

5. Before participating in the Neighborhood Leaf Pilot did you actively remove leaves from your streets in the fall? Fill in one circle.

   - o Never
   - o Sometimes
   - o Most of the time
   - o All the time

   Comment:

6. Did you opt for email or text rain event alerts? (circle) email text

   Comment:

7. Did you or the person whose email/cell phone number you provided on the commitment postcard receive an email or text alert for each of the seven rain event alerts issued between Oct. 1st and Nov. 30th? Fill in one circle.

   - o I didn't receive any alerts.
   - o I received 1-2 alerts.
   - o I received 3-4 alerts.
   - o I received 5-6 alerts.
   - o I received all 7 alerts.

   Comment:

8. Rain event action alerts were issued seven times (10/4, 10/10, 10/14, 10/23, 10/31, 11/21, and 11/26) over the course of the pilot period between Oct. 1st and Nov. 30th. For how many of the events were you or someone else able to remove leaves from the streets between when the alert was issues and prior to the rain falling? Fill in one circle

   - o I didn't remove leaves from the street in front of my home after receiving any of the rain event alerts.
   - o I attempted to remove leaves from the street in front of my home before 1-2 of the rain events I received action alerts for.
   - o I attempted to remove leaves from the street in front of my home before 3-4 of the rain events I received action alerts for.
   - o I attempted to remove leaves from the street in front of my home before 5-6 of the rain events I received action alerts for.
   - o I attempted to remove leaves from the street in front of my home before ALL 7 of the rain events I received action alerts for.

   Comment:

9. How useful were the rain event action alerts in helping you to take action and remove leaves from the streets before a rain event? (circle)

   Not useful at all Somewhat useful Very useful

   Comment:

10. Were the yard signs placed (photo below) in the pilot area helpful reminders to remove leaves from the street before the rain? (circle)

    Yes No

Comment:

11. Please review the list of barriers below and indicate to what extent (1-no problem.....5-huge problem) they impacted your ability to remove leaves from the street prior to a rain event. Fill in one circle per barrier listed.

	1-No problem	2	3-problem some of the time	4	5-huge problem
Takes too much time	○	○	○	○	○
Leaves blow back into street after clearing them	○	○	○	○	○
Parked cars in the way	○	○	○	○	○
Physically unable to remove leaves from the street	○	○	○	○	○
More leaves fall quickly after removing them to keep up	○	○	○	○	○

Comment:

12. What did you do with the leaves after you removed them from the street? Fill in one circle for primary method used.

- o Placed them neatly in piles on the grass terrace between the sidewalk and street.
- o Placed the leaves on my driveway in a pile.
- o Used leaves as mulch on my property.
- o Composted the leaves.
- o Hauled them to a yard waste or municipal collection site.
- o I did not remove leaves from the street.
- o Other: _____

13. How likely are you to continue to remove leaves before a rain event next fall? (circle)

Not Likely Somewhat Likely Very Likely

Comment:

14. If given the opportunity, how likely are you to sign up to continue to receive rain event action alerts reminding you when to remove street leaves next fall? (circle)

Not Likely Somewhat Likely Very Likely

Comment:

15. Suggestions on how we might increase participation in future efforts to make neighborhood streets and storm drains leaf-free before rain events.

Thank you!

Neighborhood Leaf Pilot Survey Results- Test Area (Participant Survey) 24 surveys returned

1-Gender

	M	F
# selected	13	11

2- Age

	<30	31-50	51-69	70+
# selected	0	11	13	0

3-What was the main reason you signed up to participate in the pilot?

	Improve quality of water into lakes/streams	Reduce street flooding	Keep streets clean	Like to help projects that benefit my community
# selected	15	1	2	8

4-Did the visit by the Friends of Pheasant Branch Creek or packet of information they dropped off play a role in your decision to participate?

	Yes, better understanding of pilot after they visited and signed up as a result	Yes, it served as a reminder to sign up.	No, I had already returned the card	No, I was already planning on signing up regardless of their visit.
# selected	7	2	9	5

5-Before the pilot did you actively remove leaves from your street in the fall?

	Never	Sometimes	Most of the time	All the time
# selected	6	11	4	2

6-Did you opt for email or text rain event alerts?

	email	text
# selected	13	11

7- Did you receive an alert for each of the seven rain events?

	none	1 or 2	3 or4	5 or6	all 7
# selected	0	0	3	4	1 6

8-For how many of the rain events you received alerts for were you able to remove leaves from the street before the rain fell?

	none	1 or 2	3 or 4	5 or 6	7
# selected	0	1	8	12	3

9-How useful were the rain event action alerts in helping you to take action and remove leaves from the streets?

	Not useful	somewhat useful	very useful
# selected	0	9	15

10- Were the yard signs placed in the pilot area helpful reminders to remove leaves from the street before the rain?

	Yes	No
# selected	9	15

11- Barriers- to what extent did they impact your ability to remove leaves from the street prior to a rain event?

	1-no problem	2- little bit	3-problem some times	4- most of the time	5-huge problem
too much time					
leaves blow back into street	12	5	4	1	1
parked cars	2	6	8	4	2
physically unable	6	5	6	4	1
more leaves fall to quickly to keep up	18	0	3	0	1
	3	8	8	3	0
# selected	41	24	29	12	5

12-What did you do with the leaves after you removed them from the street?

	neat piles in terrace	leaves in driveway	mulch	composted leaves	haul off site	did not remove leaves from street
# selected	22				1	

13- How likely are you to continue to remove leaves before a rain event next fall?

	Not Likely	Somewhat Likely	Very Likely
# selected	1	10	12

14- How likely are you to sign up to continue to receive rain event alerts if given the opportunity?

	Not Likely	Somewhat Likely	Very Likely
# selected	6	4	13

15- Additional comments

1. You need to partner with the city to pick-up. There should be a scheduled day weekly for pickup and parking should be restricted on those days, similar to how other cities handle street cleaning and garbage pick-up. Really disappointed in this program. The goal was good, but with such a disconnect between the program and the city, I now have to replant all the grass on my terrace next year. The city wouldn't pick up leaves since they allow the high schoolers to park on our streets. They wouldn't work around the parked cars. They only way to get leaves picked up was to rake them into the street so they couldn't park there. This pretty much defeats the purpose of the program. Next year if you do this you need to partner with the city so participants can have scheduled pick-ups.
2. Leaf pickup needs to be more frequent. I don't like piling the leaves no the terrace because it kills the grass. That's why people pile the leaves in the street. I waited over three weeks the first time and ended up with a bare spot. I like to help the community, but I also don't want to sacrifice my lawn.
3. Have a seasonal reminder.
4. Keep doing this.
5. Partner with city to have scheduled pick-ups and make parked cars park elsewhere for the day so they can get to the leaves. They don't pick them up if cars are parked in front of piles.
6. Difficult to always get done in time with busy schedules. More yard sign reminders.
7. Have volunteers clear streets.

Appendix G – Control Survey Mailing and Results

DEPARTMENT OF PUBLIC WORKS
DIRECTOR / CITY ENGINEER

CITY OF MIDDLETON
7426 HUBBARD AVENUE
MIDDLETON, WI 53562-3118

PH 608.821.8381 FAX 608.827.1080
E-MAIL: sstauske@cityofmiddleton.us
WEB: www.CityofMiddleton.us

December 20, 2016

Name
Address
Middleton, WI 53562

Re: Neighborhood Leaf Pilot Study

This past fall, the City of Middleton partnered with the Friends of Pheasant Branch Conservancy and others on a Neighborhood Leaf Pilot Study with the goal of improving the quality of storm water runoff within Pheasant Branch Creek and Lake Mendota watershed through improved leaf management. When leaves collect in streets storm water flows through leaf piles creating a "leaf tea" that is rich in dissolved phosphorus. This phosphorus-rich water travels down storm sewers into area lakes and rivers and can lead to toxic algae blooms, low oxygen levels and reduced water clarity that impacts both aquatic life and recreational opportunities.

The pilot study area included portions of Hubbard Ave. and Elmwood Ave. west of Park St. Residents in the study area were asked if they'd be willing to receive either text or e-mail alerts in advance of predicted rain events, and then actively remove leaves from the street prior to the rain. About 40% of the residents in the pilot study area agreed to participate, and we're asking participants to complete a follow-up survey of their experience.

Your home is in the study's control area. You may have noticed volunteers walking along your street before and after rain events this fall. They were measuring the quantity of leaves in the street to determine if residents who were not alerted to forecasted rain also actively removed leaves from the street. To better understand how residents manage leaves, we're also asking you to complete a short survey.

It would be very helpful if by Dec. 31st you would be willing to complete and return the enclosed survey or take it online at **http://tinyurl.com/zrof2a7** . Results of the pilot study and surveys will be used by the county and other partners to help develop a citizen engagement model for leaf management, which will be shared with the City of Middleton in early 2017.

Please contact Christal Campbell at campbell.christal@countyofdane.com, (608) 224-3746 with any questions, or if you are interested in receiving a copy of the final report when it's complete.

Thank you in advance for your survey participation.

Sincerely,

Shawn Stauske

Shawn Stauske
Dir. Public Works / City Engineer

encl: Leaf Pilot Study Survey

City of Middleton Neighborhood Leaf Pilot- Control Area Survey

Please complete the survey and return it to the City of Middleton using the stamped envelope provided. Thank you again for your time.

1. Gender: (circle) Female Male
2. Age: (circle) <30 31-50 51-69 70+
3. Please indicate what you currently do to manage leaves that fall on your property. Select all that apply.
   - o I don't do anything with the leaves on my property.
   - o I rake them and pile them on the terrace between the street and sidewalk.
   - o I rake them and place them on the driveway.
   - o I rake them and place them in the street.
   - o I compost my leaves.
   - o I mow over my leaves.
   - o I collect my leaves and take them off site.
   - o I have a service provider collect them and take them off site.
   - o Other:
4. Did you actively remove leaves from **your street in front of your home** this past fall? Select one answer.
   - o Never
   - o Sometimes (Please indicate how often in the comment section)
   - o Most of the time (Please indicate how often in the comment section)
   - o All the time (Please indicate how often in the comment section)

   Comment:
5. Before receiving this mailing did you know that street leaves were a main source of phosphorus from the urban environment to area waters?

   Yes No

   Comment:
6. Were you aware of the City of Middleton Neighborhood Leaf Pilot study prior to receiving this mailing? If yes, please explain how you heard about it in the comments section. (circle)

   Yes No

   Comment:
7. Did you notice yard signs placed in the terrace in front of some homes within the pilot area? (circle)

   Yes No

Comment:

8. Please indicate how much each of the following factors might motivate you to remove leaves from the street before a rain event next fall.

	1-Not at all	2	3-Some	4	5-A lot
Request from city to clear street leaves.	O	O	O	O	O
Email or text alerts reminding you when a storm is coming.	O	O	O	O	O
Belief that your actions are helping to protect our lakes and streams.	O	O	O	O	O
Belief that your actions are helping to reduce street flooding.	O	O	O	O	O
Personal request from neighbors.	O	O	O	O	O
Neighbors removing leaves from the street.	O	O	O	O	O
Desire to keep streets clean and tidy.	O	O	O	O	O
Belief that your efforts area helping your community.	O	O	O	O	O
Data showing connection between street leaves and phosphorus to our waters.	O	O	O	O	O
Yard signs reminding you when rain is coming and to take action.	O	O	O	O	O

Comment:

9. After learning about this pilot and impact leaves left on the street during a rain event can have on our waters, how likely are you to remove leaves from the street before a rain event next fall? (circle)

Not Likely Somewhat Likely Very Likely

Comment:

10. If given the opportunity, how likely would you be to sign up to receive rain event action alerts (text or email) reminding you when to remove street leaves next fall? (circle)

Not Likely Somewhat Likely Very Likely

Comment:

11. Please offer suggestions on how we might encourage residents to remove leaves from streets and storm drains before rain events to reduced phosphorus to our waters.

OPTIONAL: *If you'd like to receive a copy of the final report via email please provide your email address below*

*Email address:*_____

Thank you!

Neighborhood Leaf Pilot Survey Results-Control Area 20 surveys returned

1-Gender

	M	F
# selected	10	9

2- Age

	<30	31-50	51-69	70+
# selected	0	8	6	6

3-How do you currently manage your leaves on your property?

	Don't do anything	pile on terrace	pile on driveway	pile on street	compost leaves	mow over leaves	take them off site	service provider removes them
# selected	1	13	2	0	7	12	4	2

4-Did you actively remove leaves from the street this past fall?

	Never	Sometimes	Most of the time	All the time
# selected	7	6	3	4

5-Before receiving this mailing did you know street leaves were a main source of phosphorus from the environment to our waters?

	Yes	No
# selected	7	13

6-Were you aware of the leaf pilot prior to receiving this mailing?

	Yes	No
# selected	2	18

7-Did you notice yard signs in the pilot area?

	Yes	No
# selected	0	20

8-Motivators to remove leaves from street next fall

	1-Not at all	2 - A little	3-Some	4- More	5-A lot
Request from city to clear street leaves	2	0	5	6	5
email alerts	4	2	7	2	2
belief your actions protect waters	1	0	5	5	7
belief that actions are helping to reduce street flooding	2	3	5	3	5
personal request from neighbors	3	2	4	3	4
neighbors raking leaves out of street	3	1	6	2	4
desire to keep streets clean	3	0	6	5	3
belief that you are helping your community	**2**	**1**	**3**	**5**	**6**
data showing connection between leaves and phosphorus to waters	1	3	3	4	7
yard sign reminders	5	5	4	2	1
# selected	**23**	14	40	34	32

9- After learning about this pilot and impact leaves left in street during a rain event can have on our waters, how likely are you to remove leaves from the street before a rain event next fall?

	Not likely	Somewhat likely	Very likely
# selected	2	7	8

10-If given the opportunity, how likely would you be to sign up to receive rain event action alerts reminding you when to remove street leaves next fall?

	Not likely	Somewhat likely	Very likely
# selected	8	5	6

11-Comments

1. Communicate the message. The first I ever heard of this was this survey letter. Have a "leaf day" and invite the media. Is Middleton the only community doing this? Cooperate with Madison and the other lake burbs and do this together.
2. Pick up leaves more often and send email reminders of pick up dates for leaves; don't have time to find the pick up dates on line.
3. Demonstrate proven impact on lakes.
4. Make is easier to dispose of leaves and other debris.
5. Water tends to back up on Hubbard/Gateway corner as the street is so irregular and doesn't drain the water. The cement is higher than the

drain.

6. Reprimand those who rake their leaves in the street!

7. You already ask us to collect leaves and put on terrace for city pick up, for compost revenue.

8. Why do you let water stand in the gutter that breed mosquitoes?

9. Have city pick up leaves before storm.

10. City should offer leaf and brush pick up more often in the fall.

11. Do you have a sense that neighboring to Lake Mendota are involved in same effort. Farmers get too much of a bad rap, city folks need more of the blame.

12. Encourage leaves on grass between sidewalk and road or bagging them.