

## Lenz, Bernard

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**From:** Curt Witynski <witynski@lwm-info.org>  
**Sent:** Thursday, June 11, 2020 12:49 PM  
**To:** Curt Witynski  
**Cc:** Jerry Deschane; Jim Bachhuber; Selbig, William R; Minser, Amy J - DNR  
**Subject:** Proposing final research project on impact of leaf collection and street cleaning on stormwater phosphorous loads

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To: Municipal Engineers/Public Works Directors/other municipal staff of MS4 Communities  
From: Curt Witynski, Deputy Executive Director, League of Wisconsin Municipalities

I'm reaching out to see if at least 38 MS4 communities would be willing to commit to contributing \$1,000 annually for three years beginning in 2021 to help fund a final research project on the impact leaf collection and street cleaning has on stormwater phosphorous loads.

Many of you helped fund several years of research on this topic, which was just completed. Based on the research conducted to date, the WDNR appears to be in a position to expand the current "Interim Municipal Phosphorus Reduction for Leaf Management Programs" (March, 2018) guidance. Revisions to the guidance will likely offer phosphorus reduction credit for an additional practice option involving regular sweeping by regenerative air street sweepers.

The next phase of research will focus on whether the use of mechanical broom sweepers results in phosphorus reductions sufficient to obtain credit. The earlier research conducted by USGS (more information available here: [https://www.lwm-info.org/DocumentCenter/View/3965/MS4-update-03\\_27\\_2020\\_final](https://www.lwm-info.org/DocumentCenter/View/3965/MS4-update-03_27_2020_final)) showed that mechanical broom sweepers were somewhat effective in areas of high overhead tree canopy; however, monitoring only accounted for a sweeping schedule of approximately once every two weeks. Increasing the frequency of operation to weekly may improve the effectiveness of nutrient reduction. Additionally, because many regulated municipalities in Wisconsin already make use of mechanical broom street cleaners, assessment is needed to properly determine a phosphorus reduction credit reflecting a weekly frequency.

In addition, although studies have shown ponds to be efficient at retaining solids, they are less capable of retaining phosphorus, largely due to the mobility of dissolved phosphorus. Research at the University of Minnesota suggest ponds that are most susceptible to phosphorus export are those receiving high inputs of dissolved phosphorus, particularly from organic material. Minimizing the amount of phosphorus leached from organic detritus to ponds through effective leaf collection and street cleaning programs may be one way to reduce export of dissolved phosphorus from ponds. This, in turn, could increase the retention efficiency of phosphorus in ponds.

To expand the applicability of the current phosphorus reduction credit, the USGS, through a cooperative agreement with the League of Wisconsin Municipalities, propose continuing their research to quantify the water-quality benefits of leaf management by evaluating a mechanical broom street cleaner, operated at a frequency of once per week, in medium-density residential area with high overhead tree canopy. The study will simultaneously assess the potential impact of leaf management, or lack thereof, to the phosphorus retention capabilities of wet ponds. This research will take place in 2020 – 2023. The results of the study will likely provide further options to be incorporated into WDNR's leaf management guidance for use by MS4 programs.

***Please let me know by responding to this email if your community is willing to commit to contributing \$1,000 annually for three years beginning in 2021 to help fund the above described research project. I need to hear from you by **June 25**. I will follow-up by sending a formal letter of commitment to those communities that respond affirmatively to this email.***

Thank you.

*Curt*

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Curt Witynski, J.D.  
Deputy Executive Director  
League of Wisconsin Municipalities  
office: (608) 267-3294  
cell: (608) 354-3003  
[www.lwm-info.org](http://www.lwm-info.org)