



To Whom It May Concern:

I have been requested to provide an opinion about the use of a street sweeper, either air or mechanical broom, as a machine for removal of plants rooted and growing in a curb line. My understanding is that this request has come to the fore as part of a larger issue, which is the combining of the departments tasked with street sweeping and storm water pollutant removal.

As you will intuit by reading my essay, "[Historical and Current Overview on Characteristics and Capabilities of Street-Class Power Sweepers.](#)" which was initially developed for Puget Soundkeepers, I have long recommended the combining of those two departments. In the essay I articulate many of the reasons why this makes sense in order to minimize runoff pollutants.

However, when it comes to requiring that one of today's street sweepers be used to remove growing plant material from street and roadway cracks, doing so does not make sense and is not consistent with sweeping industry best practices. Further, I am unaware of any street sweeper that is designed or capable of doing so.

Street sweepers are designed to remove light-to-moderate accumulations of dirt and debris in an efficient manner. Typical speed for operation is in the range of 4-5 mph, depending upon debris load. The removal of heavy accumulations of dirt and debris are typically best left to machines like front loaders. To my knowledge, growing plant materials need to be removed as a maintenance task by the street department. My expertise does not include a recommended methodology for accomplishing this task.

However, it is within my professional expertise to state with certainty that removal via a street sweeper is not to be recommended for a variety of reasons. Foremost among these is that a sweeper is not designed to perform this function as a first-line, best management practice.

Whether an air sweeper or a mechanical broom machine, the only portion of a sweeper that is available to clean a curb line is its attached gutter broom. Although there are gutter brooms on the market that offer heavy wire, as well as cable-wrapped brooms, none are designed to remove growing plants from pavement cracks.

In any event, even if the upper growth were to be removed via a heavy gutter broom material, the roots would remain largely untouched. This means the problem would be, at best, only mitigated temporarily. And, because the sweeper would be tasked with performing a function outside its manufactured intent, such removal would be far from a best management practice. In fact, there would appear to be a number of factors that would combine to make doing so a potential safety risk and hazard. To start with, all classes of street sweepers are designed to move in a forward direction only, and have limited mobility when it comes to either reversing direction or sweeping closely to obstacles. The gutter broom is the only part of a sweeper that is even designed to enter the curb line area.

Plus, to remove even a reasonable percentage of pavement-rooted growing material, a sweeper's speed would have to be varied to as low speed as less than 1 mph in some instances. This creates a traffic safety hazard that would also create liability for the municipality operating or contracting the sweeper. Further, there is no way for the operator of a sweeper to even view whether or not the gutter broom has removed the

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material until after the sweeper has passed by. Once the operator sees that some plants are still in the curb line, what then?

Whenever a clump of grass is left, is it being proposed that this large, cumbersome, \$250,000+ machine should go off its route and around the block to make another pass? What if the next street is a one-way in the wrong direction; does it now need to go even further? How about if the grass is growing in a center median or around a divider?

And, even if a municipality insisted on having a sweeper operate at a speed significantly under its typical 4-5 mph, does it make fiscal sense to double the already significant cost of sweeping to do so?

To achieve an effective and cost-efficient sweeping program, streets need to be kept clear of pavement-rooted plant material prior to the sweeper being operated. As you should know, municipalities typically require notification by sweeping contractors of areas that are outside the normal parameters of cleaning with a street sweeper. These identified areas are deducted from the sweeping mileage within the contract cycle and need to be scheduled for restoration to a maintainable condition prior to sweeping taking place.

The gutter broom of a street sweeper is designed to sweep dirt and debris from the surface of the gutter into the path of the pickup head (air sweeper) or main broom (mechanical broom sweeper). Although the gutter broom will typically do an admirable job of removing plants growing on top of dirt in the curb line, in my professional opinion, which spans over a quarter-century of sweeping industry knowledge, street sweepers are not designed for, or capable of, removing plant material that is rooted or growing in pavement cracks, overlay height mismatch zones and other areas located within the curb line or elsewhere on the roadway.

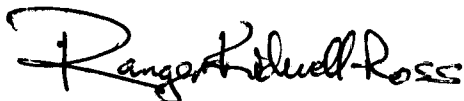
Due to the high initial purchase price and expensive hourly operational costs of street-class sweepers, the best and highest return for taxpayer dollars is to develop a sweeping program that emphasizes operating them in a manner consistent with industry best practices. In today's environmental climate, I believe that sweeper usage needs to emphasize the storm water pollutant removal ability of sweepers, which requires both relatively smooth pavement and, in most instances, the use of air sweepers.

I conclude as I began, by recommending that you read my [included overview](#) on the capabilities of today's street sweepers. Many strides have been made in even the last five years, let alone the last 25+ that I have been in the industry. However, to my knowledge there are no industry or manufacturer studies or other data indicating that use of a sweeper for removal of rooted plant removal from the curb line is a recommended usage. Should you have data that indicates otherwise please forward it to me at your earliest convenience.

If any reader of this opinion letter would like to [contact me](#), I would be glad to discuss with them this or any other matter that involves the power sweeping industry.

The above information is true to the best of my knowledge and is being provided as an industry courtesy without required or requested remuneration from any party.

Sincerely,



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