



Technical Memorandum. Use of Catch-All® in Port of Tacoma Catch Basins

The Impact of using the Catch-All® as a Storm Drain Maintenance technique

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It is coming to the attention of not only those of us in the business of stormwater but the public as well, that the routine maintenance of the stormwater inlet, typically the catch basin, is the best and most cost-efficient way to keep the rest of the stormwater system operating per design. The inlet is the point at which pollutants in the form of sediments, metals, organics, and chemicals enter the stormwater system. While trapped in the inlet sump, their removal is quantifiably cost-efficient. However, once beyond the initial entry point, their extrication becomes much more intricate and cost intensive. Ultimately, of course, many of them are not removed until they make their way into the downstream receiving waters. There, they are known to wreak havoc on salmonid life.

As this is the case, the removal of such pollutants at their entry point is quickly being recognized as the best safeguard against extreme expense in ensuring the quality of stormwater discharge. As was pointed out by Phillip Mineart and Sujatha Singh's study on this issue, *The Value of More Frequent Cleanouts of Storm Drain Inlets*, the systems that are cleaned out monthly or quarterly exhibit a significantly higher quantity of removed debris than those cleaned out less frequently, indicating that the sediment from those cleaned out less frequently is being reintroduced into the stormwater stream and making its way downstream into more costly stormwater quality systems or into the receiving waters.

While the clean-out of stormwater inlets may be more cost-efficient than the clean-out of other more complicated stormwater systems, their clean-out costs are still more than many site owners can or will bear. In 2015, owners are paying anywhere from \$50 to \$100 per clean-out (plus disposal costs). Done on a monthly basis, this cost would grow significantly to a point where very few businesses would continue to provide monthly clean-outs of their stormwater inlets.

CB#1	CB #2
Cumulative Pollutants Removed <i>One Cleaning Only</i>	Cumulative Pollutants Removed <i>Cleaned Bi-Monthly</i>
44.81 lbs.	61.7 lbs.

Figure 1 - Pollutants removed using Catch-All SDMI

It is this challenge that drove the Port of Tacoma to test the Catch-All® Storm Drain Maintenance Insert (SDMI) in two of their stormwater sub-basins to determine if its use could help them accommodate frequent clean-outs of the stormwater inlets while also keeping the cost of each clean-out manageable. Two stormwater inlets serving areas of comparable size and with comparable traffic characteristics were chosen as the test location. Each of the two inlets

were cleaned thoroughly with traditional educator truck methods. Each was then equipped with a standard-sized (22" x 26) Catch-All® Storm Drain Maintenance Insert. The test period was 10 months. The first structure, CB #1, was cleaned initially after the 1st month to get a base line then remained untouched for the remaining 9 months. The second, CB #2, was cleaned 5 times during the 10 month test period.



What was found is that the cumulative pollutants removed from the stormwater inlet cleaned bi-monthly were approximately 27% higher than the inlet cleaned twice during the 10-month period. However, in both cases a significant volume of sediment was removed. In addition, the Catch-All® filters and separates the stormwater in the catch basin from the pollutants, reducing the cost of disposal by as much as 90%.

The results of the study are encouraging in two ways. The first is that more frequent clean-outs do indeed serve to remove more pollutants from the stormwater waste stream. This is a fairly well-understood phenomenon. The second, however, is not as well known yet, and that is that the Catch-All® Storm Drain Maintenance Insert can allow frequent clean-outs of stormwater inlets without the high cost of educator truck service. This, in turn, allows the downstream systems, including receiving waters, to experience smaller pollutant loads due to the more regular cleanings of the upstream systems.

Utilizing the Catch-All® to proactively keep pollutants from traveling beyond the storm system entry point finally provides a cost effective balance between proactive system maintenance and meaningful reduction of stormwater pollutants entering the environment.