APWA Click, Listen & Learn

Municipal Stormwater Self-Audit: A How-To-Guide

A Report on the Roundtable Discussion, which preceded the presentation

Thursday, June 26, 2008

Hartford, CT

A Connecticut Road Scholar Program Elective Workshop

Sponsored by:

CT Technology Transfer Center

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Can your stormwater management program endure the storm?

Many small municipalities are nearing the end of their first 5-year permit term (December 2008). To ensure that these municipalities are complying with their permit requirements, EPA and some states have been conducting audits to assess compliance. How can you prepare, conduct your own Audit!

An APWA web-based self-audit presentation followed the roundtable discussion. This presentation addressed the following issues:

- Why EPA conducts municipal stormwater audits
- What EPA typically looks for during audits
- Lessons learned from past EPA audits
- Tools to use during your self audit

The following is a summary of the ideas exchanged at the **Roundtable Discussion on Municipal Stormwater** which was held on June 26, 2008, in Hartford, Connecticut. As many as 25 municipal and state representatives came together from 19 different agencies to share information on their experiences with stormwater issues. The following are highlights from the discussion.

Overview of what information people were seeking from the workshop:
City of New Haven: Wants a better understanding of what engineers are doing and to learn more about the MS4 process.

City of Norwalk: Wants to become more familiar with the audit process and MS4.

Dept. of Transportation (District 2): Wants a little more background on stormwater.

Town of Windsor: Wants to know how other communities have implemented stormwater ordinances.

Town of Redding: Wants a better understanding of stormwater management and to hear what other cities/towns have been doing.

Town of Hamden: Needs an easier way to do paperwork pertaining to stormwater.

Town of Woodbridge: Needs more familiarity with the audit process.

Town of Orange: Wants to find ways to implement stormwater better and with limited resources.

City of East Hartford: Wants to learn about compliance with all state regulations, and the MS4 process.

City of Stamford: Wants to learn more about how to maintain compliance and how to get other departments involved.

Roundtable Discussion

The discussion started with some of the cities/towns/state identifying their areas of interest, which then opened up into a general discussion about these issues. The discussion was led by the session facilitator, Mark Carlino, Public Works Director for the Town of Manchester:

Facilitator: How many people are actually putting reports together? (Several people raised their hands.) Reports (audits) need to get back into the hands of the people actually doing the work. We've been forced to comply with new reports without any additional funding. We do public outreach but we also need other creative ways to get that accomplished. Has anyone switched to an all salt/sand program? (Several more people raised their hands.) Manchester has seen a 1-month reduction in street cleanup.

Facilitator: We have been working through this process for three years. We have a municipally owned water company and we haven't had any reports of problems. There is no roadside testing of this but the water company, in general, does test on a very regular basis.

E. Hartford: We have been using processed/treated salt for a few years, but this has caused erosion on many of the corrugated pipes.

Monroe: The corrugated pipes may have been in the ground for a couple of decades. The erosion may not all be caused by salt but salt is definitely not helping.

S. Windsor: The catch basins and tops are getting eroded and we need to calibrate the amount of salt that goes down. You can't hit a hill real heavy…you can't "cheat" to hit a hill real hard (cover with a lot of salt) and make it safer. If you get salt at a good temperature, it will do a good job.

Facilitator: How about the catch basin and the cleaning programs – are there any good programs that can get to the majority of sumps?

Groton: It took us 3 years to get to them…3,000 sumps in total. Groton is switching to all salt next year. What are other communities going to do with their catch basins? How are you disposing of them?

Bridgeport: We use a private contractor that has it all tested out and makes sure there are no heavy contaminants in it for private use. In addition, we try to recycle as much as possible.

S. Windsor: We think of it as contaminated and only use it to cover the landfill(s).

Facilitator: If you aren't going to receive additional resources (funding or staffing) you have to cut down on maintenance which will allow you to conduct reconstruction work.

Redding: As complaints come in from the drivers and the public, the Public Works Department has had to put down additional applications – more material has to go down onto the road lately as people become more mobile. There are a lot more people driving out at 4:00 a.m. than ever before.

Facilitator: Does anyone have suggestions for an easy way to track catch basins? Anything sophisticated that works better than others? S. Windsor suggests just using one road at a time. Groton says it is important to keep better records – to stay informed about the status of the catch basins getting cleaned out.

S. Windsor: They used to have people put down 4 loads of sand/salt. Now they only need 1 load/route – the average route being 7-8 miles.

Facilitator: If the DEP was to come in and inspect you, how would you test out? S. Windsor states that everything is tracked and they keep records of how much salt is actually being used.

Facilitator: With public outreach (much like S. Windsor, which has developed actual models of stormwater systems), the Town of Manchester has developed a small scale version that shows how the underground water system works and uses dyes to show the effects and huge impacts of contaminants getting dumped into the system.

S. Windsor displays their stormwater system models at various public events and schools to get the word out to people of the effects of throwing oils, etc. down catch basins.

The Town of Groton uses dyes or Kool-Aid in golf course and farming areas to display the effects. Reaching out and educating children is one way to get the word out. EnviroScape™ (models for stormwater) is not a huge expense and can be used over and over.

Facilitator: It's a great challenge to get in to all the schools. Summer camps are an easier way. For example, in Manchester there are 10 schools to get into and that's just too much time and money.

Discussion on Ultra Urban Filters

Norwalk: We do stormwater sampling. The results aren't picture-perfect because you can't filter water coming off of the street before it comes into the system but bacteria are growing in the system anyways. We have contemplated putting in a huge filter/sponge in the out fault but the idea got tabled. We have a new implementation in pilot phase; on either of 4 sides, Smart Sponge™ hangs like a basket. You can pull the catch basin cover off and there's a steel box and water splashes over the sides, causing it to take in a lot of debris. The Smart Sponge™ doesn't filter like a coffee filter but instead water hits it and goes over the side. This filter is in place more for oil and grease rather than for other debris/contaminants. The weight will be increased by more than 80% just by being filled with pollutants.

Bridgeport: We have a problem with so much pollution on the streets that we need to take the grates off that are filled with material. It is very time consuming, especially for inner city areas. However, these areas are especially important to keep clean to protect the children going to school.

Norwalk: The Smart Sponge™ does have a little bit of a lip which helps to capture plastic bottles, etc. but still allows water to spill over the side. They're all over Norwalk. M. Carlino wonders how practical it would be if you have to find a location to empty it when there's flooding from a storm.

The question was asked: *How often does it have to be cleaned?*

Norwalk: Every 6 months the filters are replaced. There would not be enough time if you always had to go into the actual structure but for these devices you only need to take the contaminants/debris off of the top. The Smart Sponge™ is just one of the Ultra Urban Filters. There are a few different manufacturers.

General Discussion Continues

Facilitator poses the question: ***What about swirl type containers? Is there an ease of maintaining them?*** Many are privately owned…

E. Hartford: All developments we have are the owners' responsibility to keep up. We don't have many set chambers that they maintain.

Facilitator: Most of the towns' regulations are ineffective because people have private developments so towns don't have to jump into them because it's a private matter. There is sometimes a disconnect between engineers and the field crews as to what needs to get done, what they can do and can't do. For example; can't go down 13 feet, can't get into the corners of some of these things, what tools they have to work with, etc.

Redding: We have structures that are precast; we can't get into corners, we can't go down that deep (i.e. sump pumps) most of these were put in during the early 80's and many basins are starting to fail. There is some new technology with VAC trucks but when you are at a catch basin and cleaning with a dump truck some things work well but other methods need to be improved.

The towns agree that you just have to do the best you can with what you have.

Norwalk: Some things are just common sense in terms of design.

Facilitator: We need to be able to prove that the staff can maintain something before we agree to use it. Swirl containers are very expensive – so if you can't maintain them, it's going to be a huge waste of resources. You need certain tools to keep it up.

ConnDOT tries to stay away from Swirl Containers and tries to use 4 foot sumps because of the difficulty of maintaining the Swirl Containers.

Monroe: For people to discharge water into a septic tank as opposed to drywell, how are you on the same page with what the town/city wants to do with the water?

Facilitator: With illicit water discharge, the DEP doesn't get involved. The goal is to have ordinances in place for the town/city to go after parties with this type of water discharge. Has anyone adopted these ordinances?

Groton: We need to have 3 ordinances passed for this to happen.

Norwalk: The Town will follow-up on complaints from people, especially when there is physical evidence such as milky white discharge coming up out of the ground. For people who don't comply, the ordinance is very direct/clear; if you have illegal discharge directly to street or to catch basin, the fine is $250/day. Every day after that is a separate offense. If people don't comply within 60 days, then it's a foreclosure and lean on the property.

Facilitator: With the environmental issues that have come to the forefront of public opinion, this presents the opportunity to get new regulations passed with an environmental slant. Maybe 3 years ago there would have been opposition but do you think things have changed slightly? Is there now more of a willingness to put more initiative into these kinds of ordinances? For example, getting greener/more fuel efficient cars?

Facilitator: ***Are there any problems with getting sampling done?***

Groton: We do it ourselves – we need 3 dry days beforehand. There's been a huge spike in e-coli from last year to this year. Perhaps this is due to the temperature increase or that more animals are out or more people are out walking their dogs. The theory is it's an increase of dog walkers that's causing this trend in e-coli.

Stamford: Most of the public who complain about debris removal are the same people that made the mess in the first place (like chemicals, grass and "animal stuff"). The cities/towns want to be compliant but the public is not going to help.

Norwalk: The public will find a way so that the next time is worse than what they had previously done (i.e. dump it into the river this time, instead).

S. Windsor: A lot of people don't realize that all of the debris goes into the sound, rivers, ponds, etc.

Facilitator: ***Does anybody have a good system from the field side of it (i.e. restaurant, etc.)?***

Stamford: About 10-12 years ago a company would discharge steaming hot water into the storm system and you'd go down there and have 150 degree water that would be coming out and pumping into Stamford Harbor and into the canal. How much did they actually pump out there until they had to be compliant? People just end up throwing everything into the basin.

Windsor: We have no illicit discharge going on right now but there needs to be a filter system for wetlands.

Facilitator: **Are there any comments from the smaller towns that may not have as many resources (funding, staff and equipment) as opposed to the larger towns?**

Woodbridge: There's not that much difference. It takes a lot of time to get the funding to do everything. Although the same labor and effort goes into it, it still takes just as much time to check the integrity of the catch basin. Completing 45-60 basins a day is normal. The spending on unit cost/basin is $22/basin.

Redding: We try to get done what we can. A crew of 11 consists of putting together multiple departments. Just to put a sweeping crew together and basin cleaning is a labor and money issue.

Facilitator: **Has anyone heard of the term "storm water utility"? Is anyone not allowed to implement storm water utility?**

To set up a storm water utility would allow you to tax commission property with the assumption that they're contributing to the storm water system. Through this rate you would have funding to be able to take care of the storm water system. **The Town of Stonington** was able to develop a pilot program where you would be able to say that this area has a certain percentage of impervious area, get revenue in and consequently be able to cover staffing of the public works department and maintenance costs. NJ, CA and MA have opportunities within the legislative process to develop storm water utilities. This might not work well for smaller communities.

Groton: We're not looking into it but there was a pilot program where we looked for 4 municipalities of varying sizes but ultimately, this program did not get off the ground.

Facilitator: Nobody is happy with the additional taxes or fees but with this money you could look at purchasing equipment for public works or developing or putting together a storm water/catch basin crew. Being able to cover all costs is definitely a good option for increased funding.

Redding: Being a small, rural community we have a combination zoning/public works office. There are a lot of residential sump pumps creating a huge problem. The waste goes right out into the road whereas other times pipes just stick out of nowhere.

Facilitator: **Has anybody developed specific policies on how to handle storm water discharged into the street?**

Norwalk: We have ordinances. For example, with icing conditions we send people a notice. No fines have been collected yet but they do get charged.

Redding: People have been cooperative. We have been doing a lot of drainage work lately; we try to cooperate with the public on how to get drainage connected to the main line.

Norwalk: The public is not required to have an agreement as to where it gets pumped to. However, we won't allow circular drain sumps – more for the public's protection. We typically want to tie into the back of the sump. Any work needs to be inspected by the department. There is a lot of amnesty between property owners and public works. The biggest problem is the flooding in Norwalk causing us to periodically have to do upgrades.

Redding: There have been many changes to accommodate the increasing number of new places with water connected to them that never had that before.

Facilitator: Sometimes from an overall public works standpoint, there has to be somewhere to discharge where there exists the practical problem of the necessity to discharge.

Groton: Groundwater is not considered an illicit discharge in the Town of Groton.

Facilitator: Groundwater probably does create some illicit discharge. If you're lucky enough to have a storm water catch basin, then it's ok. If groundwater is regulated through encroachment process, then you have the ability to sign a waiver.

Norwalk: If storm sewer is connected to sanitary sewer, there are only a few options – it can either flood their neighbor's yard or continue to flood theirs. Public Works can tell people that they have to improve the drainage themselves. Sometimes it may seem like a tough luck situation. People can pay for it out of pocket because "it's your problem". This goes for both new and old developments. The public and businesses are obligated to disconnect sewer drains and catch basins (i.e. strip malls or Laundromats).

Facilitator: You will need to treat water that's clean and treat water that's filthy dirty. There's only so much capacity/real estate to process the dirty water. There is also the need to eliminate combined sewers. As laws/policies change and when people try to make changes within their lives, in some cases this might mean needing to upgrade the sewer. That becomes a problem because there's nowhere to put the sewer and nowhere to connect it to. Grandfathering them in would actually violate the State law. Overall, it sounds like over the last 4 years there have been some improvements in the pollutants going into the water.

-- End of Discussion --