

DOWNSPOUT DISCONNECTION



- Chicago received nearly 4 inches of rain in less than an hour on June 26, 2007. The storm was centered in an area bounded roughly by the Lawrence on the north and Addison on the south. It was intense and few people who were in it have seen any storm so concentrated.
- We received 1,257 Water in Basement (WIB) complaints that day, along with flooded viaducts and reports of Water on the Street (WOS).
- We mobilized our crews and worked through the night to respond to every request for help.



- We have attended every meeting to which we have been invited since the storm hit. We discuss the state of the sewers and offer house visits by our engineers to look at specific properties. Each property is different, and we want to serve our customers by helping them understand why their particular property might have flooded—and what they can do about it.
- Our sewer system is designed to handle a “Five Year Storm”, which means a storm with a 20 % probability in any given year. This is the rule in most big city sewer designs. While rain totals varied within the storm area, the generally accepted estimate is that this was a “Twenty-Five Year Storm”, which no sewer system known to us could have handled.
- When sewers get filled to capacity, excess water is forced to go somewhere. In severe storms, it can go into peoples’ basements.



- The Chicago sewer system is more than 100 years old, and has a finite capacity. While some people suggest installing larger sewers, it would cost about half a million dollars per block, and would still not have been able to handle the storm of June 26th. We also perform repairs and line sewer pipes in order to keep them working and extend their lives.
- We have installed 210,000 “Rain Blockers” in Chicago catch basins since 1999. They have succeeded in keeping water on the streets in order to feed it more gradually into sewers. By keeping water on the street longer, we have been able to significantly reduce the instances of basement flooding. The numbers over the years reflect a shift from more WIB complaints (as compared with WOS) to more WOS than WIB complaints. Of course, in a storm as brief and intense as the one just experienced, the water can quickly rise above the curb and head overground to homes. This appears to have happened in some instances, but the homes would probably have flooded no matter what—and the flooding would have contained sewage from our combined sewer system. In other words, the Rain Blocker program is largely successful, and should not be judged on the basis of a single storm.



- We are noticing a new pattern of intense, brief and highly localized storms that dump huge volumes of water into a single neighborhood. There have been several instances of this over the past few years, and we are interested in what climatologist might make of this.
- The dual keys are to keep as much water out of the sewer as possible, and to view the effort as a full partnership between the City of Chicago and our residents.
- We have several innovative programs which give us a leadership position in this effort.



- The City of Chicago has purchased rain barrels and is selling them at a deep discount to residents. The rain barrels convert rain water in to a resource, but they also involve disconnection of the gutter downspout from the private drain. This is crucial because it diverts water from the sewer. Water beyond the capacity of the barrel can be controlled in an overflow that directs it to lawns and gardens—keeping it out of the sewer.
- We are urging people to disconnect downspouts wherever possible. We need to be careful about this, since we don't want water going into neighbors' properties or harming a home's foundations. But if roof water is all being channeled into full sewers, there is a great likelihood it will never make it to the sewer and will end up in a basement.
- The Department of Water Management has been successfully developing a pilot project in the 6th and 8th Wards, where much of the flooding occurred last September. It involves volunteers, a partnership with home depot, and direct relationships with aldermanic offices, block clubs, neighborhood associations and others. Here's how it works:

We have been able to work directly with aldermanic offices to approach block clubs and associations asking that they help us recruit people to disconnect their downspouts block-by-block. It is important to get as many participants on a block as possible. One or two houses just aren't enough.

Realizing there are senior citizens and others who might not feel comfortable doing the work themselves, we have recruited a number of volunteers, Burners Without Borders, to

perform the work for those customers. Homeowners and volunteers all sign releases (developed by the Law Department) to hold each other and the City harmless.

DWM engineers go to the blocks and assess which downspouts can be safely disconnected and suggest where the water can be directed. It is made very clear that this step is the homeowner's choice, and not a directive from the City.

The homeowner obtains the appropriate gutter attachment to take the water into a yard or a rain barrel.

Home Depot at 87th and Dan Ryan Expressway has provided the tools and an expert to lead the effort. Under his direction, the volunteers (BWB) work with the homeowners to make the disconnection complete. Each house takes about 15 minutes. No City of Chicago employee touches a house or downspout.

We complete the evening with some music and a small scale performance by some fire dancers to celebrate people working together and to cement our new friendships. This addition of a little art to the effort has brought many people out of their homes to enjoy the performance and learn about the work. We have signed up new participants in this way.

We have chambers of commerce, churches, civic organizations and others taking an interest and offering to help as word of this project spreads.

Since the recent floods on the north side, a number of other wards have asked if we can bring the program to their neighborhoods, and we're preparing to do just that.

We are also using these new friendships to educate people on the other steps they can take, ranging from increasing Green space on properties to rooftop gardens and permeable surfaces.

We are also collecting the downspout sections that can't be re-used by the homeowners, and we will get a metal sculptor to turn them into a temporary work of art—a monument to people working together.

We are finding that people are very receptive to this program because they recognize the importance of partnership in flood risk reduction. It is all based on sound environmental principles. We believe that Aldermen Harris and Lyle would be happy to speak to the success of our initial efforts.

It is also a chance to view flood precautions as a set of social relationships, and not just engineering feats. The addition of performance and art to the mix helps bring people together in a very important cause.