



DIRECTOR OF PUBLIC WORKS

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MEMO

TO: Aldermen, Mayor Speaker, Dean Marquardt

FROM: Tom Grisa

SUBJECT: Update on flooding in Brookfield

DATE: June 13, 2008

This will serve as an update to my previous emails regarding the storms over the past week.

The storm Thursday night had a total rainfall of 2.57" from 3 pm to 5 am with a 12-hour peak of 2.38". Adding this to previous totals puts the rains over a foot during the last seven days. Plus the rain on Thursday June 5th makes this an even more extreme event since the ground was already saturated and the rain had nowhere to go but to run off.

I am including a drawing showing how much rain fell in the two day period on the 7th and 8th and how it compares to the 100 year event as listed by SEWRPC (green line). The red line is the rainfall as measured on the west side of the City and the blue line is for the east side of the City as measured in Elm Grove. Anytime the lines are above the green line means the rains exceeded the 100 year event. This event exceeded the 100 year storm.

I am also including a table showing the rain vs. time to determine the magnitude of the rain events. The combination of back to back storms exceeded the 100 year event for a ten day period (even though we only have 7 days of rain events). This was extreme – which should be obvious to all by now – just watch the news or pick up a paper.

Despite this most recent rain on Thursday June 12th, the City faired well. We had very few problems Thursday night. Some surface water flooding occurred in two locations, but by the time staff got out there the waters had receded already. The rains Thursday night and Friday morning came hard for short bursts, then there was a respite before the next downpour. So while streets and yards sometimes filled up, they were allowed time to drain before the next batch of rain came which is why I think the area was less

impacted this second time around (plus there was less rain). No calls to the treatment plant for sewer backups as of Friday morning.

There were power outages in Brookfield but it is unclear for how long or how extensive.

All tests on the water system indicate the water is and has been safe to drink throughout the storms - no compromise of the system, unlike many private wells.

The City's regional treatment plant normally handles 7 million gallons per day (MGD). Our treatment plant is designed to treat a maximum of 50 MGD. Saturday and Sunday the plant peaked at 68 MGD. That is 50% higher than we have ever had before since the plant was upgraded in 1996-1999 (previous record 44 MGD). Our Riverview interceptor (along the Fox River) normally operates at 2 MGD and was flowing at 28 MGD for a time. The treatment plant is still operating above 50 MGD as of Friday morning. Flow from contract communities to the west is extreme as they have been hit hard and more subject to flooding as rivers and lakes continue to rise in their area.

No bypass pumping of the sanitary sewer system was required Thursday night or Friday. Pumps were in place and being manned throughout the event.

Following up with residents who called in to report their problems indicates that power outages impacted whole neighborhoods at a time. This impacted those downstream since sump pumps were not working and poured water down floor drains in mass quantities quickly, overloading the sanitary sewers and resulting in many basement backups. Other locations with power still had sump pump failures (couldn't keep up or burned out) again resulting in flooding of basements and backups elsewhere.

We have had crews out working throughout the storms since Saturday addressing flooded roads, inlets, yards, pumping out sewers to relieve basement backups as best as possible and repairing washouts of roads. We also started picking up flood damaged debris Thursday and will continue through next week or as long as it takes to get to all areas. Some residents have brought in flood damaged material on their own to the Recycle Center but we do not want to encourage that since they tend to get in the way of our operations and we are concerned for safety if vehicles mix with our trucks and end loaders, etc.

Some residents have suggested citizens clean off inlets (i.e. adopt an inlet) which would really help since our crews cannot be everywhere at all times. Much of the street flooding occurred as branches, leaves, mulch, etc. covered and blocked inlets. If this is to be implemented however, residents would need to take great care to avoid dangerous floodwaters and traffic.

Other suggestions that have come in include rigidly enforcing storm and drainage easements. One resident, specifically in the Imperial subdivision where they were hit hard, indicated that the overland flooding in the drainage easements is caused in part by structures such as fences, pools, trees, bushes, and other stuff that property owners have placed in the easements which block flow. We hope to assemble maps indicating where

the easements are to help identify obstructions as seen using aerial photos and would like the Council to authorize us to enforce the easements and require removal of these structures illegally located in the easements. Clearly this will need additional time and discussion before implementing.

Attached is a Road Closed report as of this morning from the Police Department.

Despite the damage to many areas, there are a number of areas that had previously been inundated that fared much better than they have in the past (even with smaller storms). I can't begin to list all the areas where improvements occurred over the past ten years that have not reported problems as I am certain I would forget some. Other areas that were still flooded or experienced basement backups seem to be hit less hard than in previous events, but we are still gathering data and some have not reported in.

It might be interesting to compare to the past, but even that may not paint a clear picture since we will never truly know who all reported and who didn't this year and who reported in 1998 and who didn't then. Also every storm event is different as the rains can come fast all at once or slowly and build from there. Variables also include if there were power outages and if so, for how long, or if the area had a previous improvement to it or not.

We hope to analyze the data that we are collecting over the next few weeks and months and then present something to the Boards and / or Council. A hard decision will need to be made regarding what the City should do to address the event which far exceeded the national standard rain design event.

As always, if you have any questions, please contact me.

CITY OF BROOKFIELD POLICE DEPARTMENT

SUBJECT: Road Closures/Traffic Signal Problems due to flooding

DATE: June 13, 2008

As of: 8:00AM

- Barker Rd. – CLOSED- River Rd to Capitol Dr.
- North Ave – CLOSED Derrin Ln. to Barker Rd
- Barker Rd. – CLOSED – North Ave to Gebhardt Rd.
- River Rd. – CLOSED- Barker Rd. to Brookfield Rd.
- Springdale Rd – CLOSED South of North Ave.

JPH

6/13/08 8:00AM