

MEMO

Date: April 27, 2011

To: Village of La Grange Park

Attn: Ms. Julia Cedillo, Interim Village Manager

From: Paul E Flood, Senior Vice President
Mark D. Lucas, Vice President

Re: Engineering and Capital Projects Committee
Summary of Survey Results

We have reviewed the results of the Flooding Survey conducted on the 900 & 1000 blocks of Meadowcrest Road, Community Drive, Robinhood Lane, Sherwood Road, Forest Road Homestead Road, and 31st Street residential properties between Barnsdale Road and LaGrange Road. The Village received 128 responses out of the approximately 250 surveys delivered to properties in the selected area.

The area designated for the survey was targeted since the sewer system servicing each of those particular blocks function independent of the other blocks during short duration high intensity rainstorm events that the Village most recently experienced in June and July of 2010. The response was approximately 50%, and the information gathered can be considered a valid indicator of the drainage issues facing this particular section of the Village. The Village and our office can use this information to identify appropriate methods of mitigating the flooding within that section of the system. Additionally, the information collected, when combined with results from other areas will facilitate the Village's effort to formulate community wide approaches for addressing flooding concerns that are effecting an area greater than studied.

A summary of the data received is as follows:

Street	Delivered Surveys	Respondents	Basement Flooding (Sewer Back-up)	Seepage	Rear Yard	Homes with Overhead Plumbing	Downspout to Sewer
Meadowcrest	42	27 (64%)	5 (4)	19	16	19	12
Community	42	24 (57%)	9 (6)	13	15	19	18
Robinhood	42	29 (69%)	10 (6)	15	19	17	11
Sherwood	42	15 (36%)	4 (1)	7	5	9	4
Forest	42	14 (33%)	5 (3)	7	11	8	7
Homestead	18	11 (61%)	2 (1)	6	5	7	3
31st	18	8 (44%)	3 (3)	2	6	3	5
Total	246	128(52%)	38	69	77	82	60
Total as percentage of respondents			29.69%	53.91%	60.15%	64.06%	46.87%

Based on the results of the survey the following our issues we recommend be considered:

- A majority of the respondents indicate that the roads in front of their homes flooded, with 26.56% (34) reporting a disruption of access to their properties. Based on observations of this past year's events the vast majority of roadway flooding in this area was temporary in nature having duration of less than 1 hour. The result does indicate that there may be resident sensitivity to water being stored even temporarily on the roadway. If flow restriction is selected for a particular section of sewer public outreach indicating the benefits/liabilities of the program will be critical to manage resident expectations. Additionally, if the Village installs a storm sewer system within the area south of 31st Street and east of Lagrange Road, consideration may be given to expanding the sewer to service this area over time. It is not currently considered an immediate priority from an engineering perspective.
- Approximately 30% (38) of the homes experienced basement flooding. In reviewing the individual responses about 80% (24 of 38) of the homes that experience basement flooding indicated that it was either completely or partially a result of sewer back-up. The number of sewer back-up respondents on each particular street suggests that the issue may be best addressed through a backflow prevention program rather than roadway drainage restriction. **The cost for restricting flows on a typical one block street (such as Jackson to 31st) is approximately \$96,500. The cost for installing a check valve is estimated at \$3,500 per household, and the cost of installing overhead plumbing would be approximately \$12,000 to \$15,000 per household (not including finished basement restoration).** Thirteen of the twenty-four (13/24) homes with sewer

back-up issues indicated that they had a sump pump system taking flows from at least some of their lower level fixtures and drains.

- A significant number residential structures (64%) have overhead plumbing or sump pumps receiving all or part of their below grade fixtures and drains into the service, greatly reducing, but did not eliminate instances of sewer back-up. The Village can consider developing an outreach program to educate residents about having their system inspected by a plumber to ensure that the check valve is seated properly and if all their lower level floor drains are routed to the pump.
- Approximately 40% (15 of 38) of the homes experiencing basement flooding indicated that it was either completely or partially a result of window well or exterior stairwells allowing water to enter into the lower levels. One issue in reviewing this type of flooding is that it could be the result of poorly graded yards pitching toward, rather than away from the window or stair wells, the result of obstructed drains, ground water entering the window or stair wells from saturated rear yards or any combination of these. In the first two cases we recommend that they be addressed by the homeowner directly. The later item is related to rear yard flooding and is addressed below.
- Approximately 47% (60) of the homeowners responded that their downspouts are connected to the sewer system. The average residential structure covers 1,300 square feet in this area adding approximately 3.5 acres of tributary area to the sewer system. Because a roof area is impervious the volume and rate of flow entering the sewers from the roofs can become detrimental to the capacity of the system to convey storm runoff during both short intense and long high cumulative events. Eliminating these connections will reduce the instances of sewer back-up that results in basement and roadway flooding. We recommend the Village review existing policy/codes relating to restricting roof drain flow directly into the system.
- Approximately 60% of the respondents indicated that they have experienced rear yard flooding that lasts typically for 2 to 3 days. Of those homes, 39 also indicated that they have seepage within their basements. There is not a direct correlation between the two issues but based on the typical soil profile of the this area, the rear yard flooding while not being the single cause is a likely contributor to the seepage of water into the basement. Several issues contributed to the flooding, including the reduction of pervious area and changes in grading associated with development of the properties. The current development standards should be reviewed and possibly changed to further reduce the impacts of development on rear drainage areas.